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Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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EDITORIAL NOTES

THE NEW YEAR—AND GREETINGS!

Comes now another year with its three hundred sixty-five clean new pages awaiting their inscription, and who shall venture to say how they shall mark recorded events? Truly, we may be thankful that no one can tell us the happenings to be, for perhaps some of us might throw away many of these days and others consume many of them in anxious waiting. The JOURNAL, the Publication Committee and the Editor extend their thanks to you all, every one, for the help that you have given in the past year and for the help that we feel sure you will give during this coming year, so pregnant of possibilities. We know what a potent thing suggestion is, and so it is a good and valuable custom to send out on the very first day, wishes for "A Happy New Year"; perhaps happiness forced into the first day of the year may tinge the whole twelve-month to our own better feelings. And so, to you, A Happy New Year! May we strive hard to make ourselves better physicians and better citizens; our county organizations stronger and more helpful to their members, each member doing his own little share of the work of betterment—and not only scientific betterment, but social and personal betterment to the decrease of bickerings and jealousies and idle contentions that harm none but each one of us. Let us earnestly try to write better things on these 365 pages than we ever wrote before. A Happy New Year!

WHAT IS HONESTY?

In the last issue of the JOURNAL was printed a letter written to me, and my answer. In the answer the statement was made that probably no one is entirely honest and for that statement I have been taken to task. But it is quite easy to demonstrate the truth of it to anyone who will stop and really think. Honesty is undoubtedly to be found on every hand; and equally undoubtedly, it pays. But, probably because of the fundamental characteristic of a desire to get something for nothing that exists in all of us, we can find queer streaks of large or small honesty mixed with large or small dishonesty. Why is it required that large numbers be placed on automobiles? If everyone who owned an automobile, knowing that there is a tax on such vehicles, went promptly each year to the tax office and paid the proper tax voluntarily; and if everyone who owned or ran an automobile and hit some person or thing would immediately notify the police, giving his correct name and address, would numbers be needed on automobiles? That is a very simple thing, an every day thing, and yet, when you come to think of it, is it not a little illuminating? Again, for a simple illustration: Did you ever know anyone who really admitted the full amount of his personal property for taxation purposes? Men who individually would not think of taking a five-cent piece that did not belong to them, will collectively wreck a railroad or ruin many people by manipulations that result to their own profit and benefit. To go higher and take an ecclesiastical example: The Trinity Church Corporation, in New York, is one of the richest church holdings in this country; it is enormously wealthy. For many years it owned and collected the rents from a number of tenement houses that were a disgrace to any civilized community; dark, damp, disease-breeding shacks that reeked of filth and germs of disease and death. The toll of life collected by Trinity Church from these tenements will never be known, but it must have been very great. And yet the affairs of the corporation were administered by grave and dignified and undoubtedly most honest gentlemen and it is safe to presume that in all the years of their administration, not a single penny went astray. Is it enough? One could go on indefinitely citing illustration after illustration of this peculiar quirk in the human mind. A great jurist once said that if every adult person were to be punished for an infraction of one or more existing laws, there would be no one out of jail!—P. M. J.

SPECIALS TO THE A. M. A., SAN FRANCISCO, 1915.

A special train to carry the New York and New England members and delegates to the A. M. A. meeting in San Francisco, June 21 to 25, is already planned and reservations are being made. The special is being handled by the McCann agency, in New York, and they have arranged a schedule that will bring their more than welcome trainload of physicians into San Francisco June 20th. On the return, this party goes north

through Portland, Seattle, etc., and will stop one day at Rochester, Minn., for a visit to the Mayo clinic. This is but the first of many special trains that will be made up to bring members from various parts of the country, but we are glad to notice that our friends in New York have begun early to arrange matters so as to be with us this June. Good luck and a pleasant trip to them.

"PHYSICIANS' PROTECTIVE ASSOCIATION" NOT ENDORSED BY STATE SOCIETY.

We have been advised that an organization or association calling itself "The Physicians' Protective Association" and ostensibly formed for collecting accounts of physicians and dentists and issuing policies of protection against alleged malpractice, claims to have the endorsement of the State Society. The concern has been operating in Los Angeles and has more recently opened an office for business in San Francisco. It in no way has the endorsement of the State Society or any other society that we know of and any claim so made is probably for the purpose of misleading our members. We do not know much about this association but it can be taken for granted that any concern that starts out by misrepresentation is one to be avoided.

WORTH REPETITION.

The following quotation from the *Bulletin* of the Lake County (Ind.), Medical Society, touching as it does on a point so often mentioned in these columns, is well worthy of perusal. Doctors are notoriously easy to get into wildcat companies, mines, oil schemes and the like. If they would but ask advice or take counsel, they would save themselves many and many thousands of dollars:

> Has it ever occurred to you as being peculiar that so many stocks are offered to physicians? It hardly seems possible that the salesmen who have various good things to offer should all be philanthropists, and yet, one would gain that opinion after listening to their talk a few moments. The fact is, physicians are generally regarded as "easy marks" by stock salesmen. We have yet to hear of any of our friends getting in on a good thing through the offers of these salesmen, but know of many cases to the contrary. Give them the "once over" before listening too intently.

MAIL-ORDER FRAUDS AND OTHER PAMPHLETS.

"Medical Mail-Order Frauds" is the title of a recently issued pamphlet from the Propaganda department of the A. M. A., and it is to be had from the Chicago office for the nominal price of ten cents. A number of other pamphlets dealing with various sorts of frauds, quacks and bunks have been issued and it would be an excellent thing if physicians generally would get a few copies of these pamphlets and hand them to occasional laymen or patients to read; it all helps to spread the good work of education. The Propaganda Department, working in co-operation with the Council on Pharmacy and Chemistry, is doing a tremendously valuable task for the good of the people. More power to it.

COUNTY UNITS, BE CAREFUL!

We cannot too often call attention to the fact that a large number of unqualified physicians are being granted licenses to practice in this state under the present law, and that all county units should exercise the greatest care in investigating applicants for membership. A recently published article from a member of the Board of Medical Examiners admits this condition of things, and the records in the office of the State Society amply prove it. Many persons are securing licenses now, who have been rejected over and over in years past, under the old law. What the present legislature will do is, of course, an unknown quantity, but the activity of the osteopaths, some disgruntled factions in the regular ranks and a horde of quacks, is well known. Letting down the bars and reducing standards required for the practice of medicine is what legislatures call "being fair and liberal to all"; but is it fair to the people to allow these quacks to pillage them? The trend of things, not alone in this state but also in many others, seems to indicate that it will be easier and easier for almost anyone to get some sort of a license to practice something—which is but a roundabout way of getting a right to practice medicine and surgery, though totally unqualified to do so. It seems probable that we must reconcile ourselves to the inevitable coming of the time when a license to practice will not mean much of anything as an indication of the ability of the licensed one to care for the sick or injured. What is to be done? It is useless for us to plead with the legislature for they say we are biased and unfair and a "medical trust." The one only hope in sight, seems to be to build up our county societies, in quality and not quantity merely, and to safeguard and protect membership so that it will be a real badge of qualification to practice medicine. In other words, make membership in the Society take the place, so far as practical purposes go, of the state license to practice. Think it over and see how you can help do this.

SPLENDID WORK.

The "Propaganda for Reform" department of the A. M. A. has done and is doing splendid work in uncovering frauds in patent medicines, quackery, etc., and it should receive our sincere respect and support. It has just isued a catalogue of lantern slides made up to illustrate a large number of these fakes in lectures to the public, and it would be an excellent thing if some of the county units would look into this matter, send for the catalogue and arrange to give one or more public lectures, illustrated with lantern slides, for the benefit of the public. Any sort of a lantern slide show will draw a good many people and so much beneficial enlightening would result. A request to the A. M. A. office will bring the catalogue, "Lantern Slides and Exhibit Cards" and the prices are very reasonable. Try it.

ONE-SIDED "RECIPROCITY."

The present Medical Practice Act, while it has many good features, works a great injustice to California citizens in that it lets down the bars in California for many kinds of licentiates from other states but does not require that the other states accept our own licentiates. It has the effect of bringing into our state many physicians who on account of ill health, or for some other reason, were unsuccessful in their own states and it also permits candidates who have repeatedly failed to pass the California examinations to go to other more lenient states, pass their easy examinations and then promptly return to us by the "Reciprocity" route. The evident unfairness of the law in this particular makes it unique. In the endeavor of the legislature to be broad-minded in their attitude towards physicians coming to California they have forgotten that California should ask from its neighboring states that same respect for their regulations that it itself gives. In this issue of the JOURNAL, an article by a member of the Board of Medical Examiners calls attention to the fact that a very large number of poorly-trained applicants licensed in other states prior to 1901 have presented themselves for reciprocity licenses.

HOW IT PAYS TO ADVERTISE.

In a pamphlet issued recently by the Calso Company are to be found a few sentences that tell quite a story; advertising in the STATE JOURNAL seems to pay some people, anyhow.

> The present sales of Calso water in San Francisco exceed three hundred cases a month, and it has been shipped in 5-case lots to several of the Eastern cities, to other cities in California, Nevada, and other Coast States.
>
> When it is considered that this growth has been without the expenditure of a dollar in any form of advertising except in the "California State Medical Journal," and with no expenditure for salesmen or any other form of stimulation, it may be truthfully said that this is a phenomenal record.

FRACTURES; SUITS; X-RAY PLATES.

It has becme absolutely necessary for every physician to exercise the utmost caution in treating a case of fracture. A large percentage of suits for alleged malpractice are based upon cases where a fracture has been treated. It is essential that the physician take an X-ray plate of the fracture, preferably both before and after setting, *and keep the plate!* Failure on the part of the physician to take this simple precaution, has cost the Society close upon $5,000, most of which would have been saved had proper X-ray plates been taken and kept by the attendant. On this account the House of Delegates authorized the Council to make a just rule covering this point in connection with the medical defense work. The Council has ruled that each such suit will be considered separately and on its own merits, but that unless it can be shown by the member sued that it was well nigh impossible for him to have an X-ray taken, he must defend the suit himself and pay for his own carelessness. The basic principle of the rule is sound; it is not fair to permit one careless member to cause a great expense to all the other members. Ninety-nine times in a hundred, it is quite possible to have an X-ray plate made, either before or after setting—or both—and the protection secured is enormous. The Council wishes and intends to be absolutely fair to all in its administration of the heavy burden placed upon it by the Society in the guidance of this medical defense work, but in doing so it does not wish to permit any member, through his own fault, to be an expensive burden to the whole Society.

Always have an X-ray taken of your fracture cases—and keep the plate; do not give it to the patient.

IMPORTANT NOTICE!

New Medical Defense Rules.

That the number of suits for damages for alleged malpractice has very greatly increased in the last two years and that it is increasing, are facts that have been frequently commented on in the JOURNAL and in the reports of the officers at the annual meetings. The Council of the State Society has employed the best attorneys that money can secure and in formulating its rules and in handling cases, nothing is done without the advice of our attorneys. And this is for the purpose of securing the greatest good and benefit to all the members of the Society. Note the following points as they are of the greatest importance to you:

Be sure that your dues are paid to the Secretary of your County Medical Society before the end of February. Any member whose name is not sent in and whose assessment is not paid before March 1st, is dropped *as from January 1st* and he is without the protection of the State Society for the period from January 1st to the date when his assessment is sent in. He may have to defend a suit arising from some case occurring during this period. Be prompt with your dues.

The Council has ruled, on the advice of our attorneys, that if a member who has insurance in some insurance company giving him protection against damage suits is sued, he must at once *elect whether the insurance company is to undertake his legal defense or the Society.* In the past we have had a great deal of trouble and confusion and unnecessary work and expense by having divided responsibility. The member so sued must remember that if he elects to have the Society take charge of his case, he violates a clause in his policy and has thrown away the money he paid as the premium. If he has the company take charge of the case, and if he will see that our office is kept in touch with the progress of his case, our attorneys will co-operate with the insurance company's attorneys, should it seem necessary or wise to do so. It is the desire and the

purpose of the Council to make sure that every member is fully and properly protected, while at the same time conserving as fully as may be, the limited funds at their disposal. The insurance company has been paid to do certain work and it is our purpose to see that they do it and do it properly and not get out of any of their liabilities.

Do not sue within a year. A most important rule was made by the Council at its December meeting; and this, too, on the very emphatic recommendation of our attorneys. A suit for damages cannot be brought after one year from the time the services were rendered. If the doctor sues to collect his bill before the year is up, the patient, often because he does not want to pay the doctor's bill, brings a counter suit or cross complaint. It has frequently happened that some member has become angry at the delay in payment of a small bill, has turned it over to a collector who has brought suit to collect. The patient thereupon has brought a counter suit and we have been called upon to defend the latter action. This sort of things has cost the Society thousands of dollars and is quite unnecessary, for the physician's claim is not outlawed until after four years have gone by. The Council has therefor ruled that the Society will not defend such suits, *except* in this case: If a member has such an outstanding bill and wishes to sue to collect, he must submit the whole matter to the Council and if the Council considers that the facts warrant him in suing, in spite of the chance of a counter suit, he may then do so and if he is sued, the action. This sort of thing has cost the Society If you turn your accounts over to a collector, instruct him not to bring any suits within a year. This is imperative and must not be overlooked. It is not fair to the other members of the Society, to take hundreds of dollars out of the treasury—for no good reason.

MEDICAL ERRORS AND EDUCATION.

The following remarks, developing and extending some words of the editor's in the last issue of the JOURNAL, are so true and so forceful that they should make each one of us stop and think:

In the reply to the letter of Mrs. J. W., published in the December JOURNAL, page 519, you refer to the fact that fee-splitting between the physician and surgeon, the doing of abortions, the doing of unnecessary operations, "contract practice, lodge work and similar things," are among the three or four largest problems in medical sociology.

You dismissed the question of abortions very philosophically by stating a well-established, but too little appreciated truth that "they have probably been performed since the first woman became pregnant and desired not to have children, and they will be performed so long as women and men wish to avoid the responsibility of parenthood." I would add to this that legislation has been a failure in correcting this matter and that the sole hope of changing the situation lies in the education of the race and in teaching people to live so that intellectual standards, individual opportunity, appreciation of social and economic welfare, replace our present commercial standards; so that home and not dollars, a love of our fellow men and not a selfish love of show, will be natural consequences of a far less complex and strenuous life than that which marks our time.

I would say a word also about the correction of fee-splitting. Just so long as the public is taught to regard the simple mechanical work of the surgeon in a spectacular way, he will be able to exact from the public fees out of all proportion to the value of the operation as compared to the value of the well worked-out plans for the perfecting of which surgery may, in the judgment of the physician, be necessary or advisable. There is an enormous disproportion in value placed on the work of the physician and that of the surgeon. Even where the surgeon works out the entire problem himself, as many are fitted to do, his charge for the mechanical part of the solution of a problem is out of proportion to the amount which would be paid a physician for one of the many medical or surgical procedures, frequently life-saving, which he may be called upon daily to perform (thoracentesis, lumbar puncture, etc.).

There are thousands of illustrations in every practitioner's career of these points. A few recent cases of no unusual character may serve to accentuate the situations of every day occurrence. A case of uremia in chronic nephritis with convulsions and coma of seven days' standing seemed to the physician in charge, after a careful study of the case and a failure of every medical means of relief, to demand the slitting of the capsule (Edebohl's operation) as the patient's only chance. A surgeon was called in and another physician. The physician agreed that the operation was demanded. The surgeon took the ground that the decision should rest with the physicians. The operation was performed, the patient lived, the surgeon got a thousand dollars, the consulting physician only a small part of that sum. What do you think the physician in charge gets in a case like this? It is easy enough to say that he ought to get ten times what the surgeon gets, which is a truth, for his was the entire responsibility, but I do not think there is a case on record where the physician ever got as much as the surgeon in these circumstances, and even the surgeons, I am sure, would look askance at the physician who demanded it as a rule.

Another case. After a serious pneumonia which nearly caused a man, advanced in years, his life,

and in the course of which he consumed $600 worth of oxygen, the patient had an empyema which was circumscribed and presented some difficulties in diagnosis and location. When the case was thoroughly worked out, a surgeon was called in who resected a rib at the point indicated to him. Every convenience for performing the operation was offered him, and the physician took all the responsibility with the patient and family. The surgeon made a few subsequent visits, collected a thousand dollars, and at the end of ten weeks' care, several of which were under great strain to the physician, he got $450.

These illustrations could be multiplied without end, and the conclusion which I wish to present is that fee-splitting will go on just as abortions will until you educate the people to understand how much surgery owes to medicine, and to appreciate relative values. The result will be that physicians will be paid more or surgeons less. The abuse will go on until one of those ends is reached.

The doing of unnecessary operations will cease to a large extent when academic standards enter into the control of more hospitals, and the public comes to appreciate what these standards mean. As it is now, there are blacklists in nearly every hospital in San Francisco and certain men cannot put their patients in these hospitals because they are known to do unnecessary operations. A little more of this sort of standard and it would be a great deal easier for the public to separate the sheep from the goats.

Finally, the question of contract and lodge practice. It is the brevity of your answer which leads me to fear that your true and wise reference to there being "evil in their abuses while in their legitimate use they are not necessarily wrong" does not go far enough and may be misunderstood. Contract and lodge practice are not only "not necessarily wrong" but they are absolutely essential and legitimate means of defense for the poor, and they are bound to be a large part of the practice of medicine in the immediate future. An examination of the economic aspect and the necessity of this form of work will convince any fair-minded person that there would have been no medical practice in many pioneer enterprises, had it not been for contract practice. The nation, the state and the municipality have established the absolute necessity of it in the handling of large problems of health and in providing hospital care. Lodge practice with all its abuses is but the poor effort of the inexperienced to work out some system of health insurance. It behooves the profession to recognize this fact and to protect the public by insisting upon legislation that will correct the abuses of lodge practice, and extend in scientific and economic ways the opportunity, to all classes of small wage earners, for health insurance. Not professional, but government regulation—just as it is in the case of life, fire, and accident insurance, is what is needed.

ORIGINAL ARTICLES

EXPERT WITNESS FROM THE STANDPOINT OF THE ATTORNEY.

By OSCAR C. MUELLER.

The present status of expert testimony is unquestionably a disgrace to all the professions, and we should free them from this stigma and have California pioneer remedial legislation.

" 'Believe no expert,' says the cynic Bar,
Yet how unjust—all alike deride.
This swears white black; but straightway haud impar,
An equal sage approves the candid side."

As long ago as 1874, Professor John Ordronaux declared:

"There is a growing tendency to look with distrust upon every form of skilled testimony. Fatal exhibitions of scientific inaccuracy and self-contradiction cannot but weaken public confidence in the value of all such evidence. Some remedy is called for both in the interest of humanity and justice."

Forty years have elapsed with no remedy.

An expert witness should always be qualified either by professional, scientific or technical training, or by practical experience in some field of human activity, conferring on him an especial knowledge not shared by men in general. The question of the competency of an expert has frequently been before the courts. We have a code provision in California, Section 1870 of the Code of Civil Procedure, Subdivision 9, which provides that the opinion of a witness may be given on "question of science, art or trade when he is skilled therein"—and there we end.

A judge of the Supreme Court of the United States declared in a leading case that "experience has shown that opposite opinions of persons professing to be experts may be obtained to any extent; and it often occurs that not only days but even weeks are consumed in examinations to test the skill or knowledge of such witnesses and the correctness of their opinions, wasting time and wearing the patience of both the court and jury, and perplexing instead of elucidating the questions involved in the issue."

In a celebrated case in New York City, the expert testimony required six days for its introduction. Eminent surgeons were called and learned counsel examined them. When the judge charged the jury he told them to disregard all of the expert testimony, as the same was too contradictory!

In the famous Leutgert murder case, tried in Chicago some years ago, the bones of the victim were discovered in a vat. Some of the most widely known osteologists of the age strenuously insisted that the bones in question did not belong to a human being, but belonged to a hog!

In another well-known case three doctors testified regarding the mental capacity of a man. Two of the doctors, of vast experience, differed radically. The third was a young practitioner, and he was believed because of his pronounced in-

partiality. This emphasizes the necessity of court experts or a commission, which I will discuss later on.

EXPERT TESTIMONY WASTE OF TIME.

In a recent case in the Superior Court of Los Angeles County it was necessary to ascertain the physical condition of a boy for the purpose of deciding the question of his custody. It was a contest between divorced parents. When one of the doctors was called Judge Wood stated that he could not prevent the attorneys placing him upon the stand, but he warned them in advance that it would be a waste of time. Referring to this doctor, he said:

"He has been on the stand in my courtroom and testified on the side that paid him so often and in such fashion that I do not place any credence upon his testimony. Many times he has appeared and testified in jury cases. In these instances the court had impotently to hear and to see its effect upon the jury."

Another judge of the same county in a criminal case, in speaking of the medical profession, says:

"I have the highest respect for the profession as a whole, but many physicians of the highest standing refuse to go into court and give expert evidence. They refuse because they know their statements will be looked upon with suspicion."

A case involving considerable expert testimony was that of the investigation of the report of the inheritance tax appraisers in the estate of Ida Hancock Ross. The estate is now pending in Los Angeles County.

Four or five witnesses testified that the value of the estate was seven and one-half to eight million dollars. These experts appeared for the state. The witnesses for the executors swore that the value was from three to three and one-half million dollars—a slight difference of three million dollars. The award of the court was in the neighborhood of three million three hundred thousand dollars. In this Ross estate the highest estimate of the witnesses was $7,028,246, while the highest estimate made by an expert called on behalf of the estate was $3,050,398.

REAL ESTATE EXPERTS.

A case that attracted wide attention was that of opening of Broadway in Los Angeles, between Tenth and Eleventh, and between Twelfth and Pico. According to the witnesses for the property owners the value of the property taken was $2,069,949.38, while the witnesses who testified for the City of Los Angeles was $896,863.62, or a difference of $1,173,085.76. The verdict of the jury was for $1,209,568.57.

In speaking about testimony of paid experts, Judge Walter Bordwell termed their testimony as "mental acrobatism, dexterity and juggling." Continuing, Judge Bordwell says:

"In the very nature of things under such circumstances openness of mind and delivery of testimony free from bias are out of the question. Under such conditions witnesses are saturated with prejudices."

At the present time there are so many technicalities surrounding the introduction of testimony offered by experts that when a layman sits in court and hears the objections made we can understand why Frederick R. Coudert, the eminent New York lawyer, said, in his book "Certainty and Justice":

"The public naturally . . . think the law is a mere Chinese puzzle, enacted by lawyers for the benefit of lawyers."

Perhaps the leading case involving expert testimony in California was that of the Estate of Dolbeer, 149 Cal., 227. Prominent San Francisco lawyers were arrayed against each other. If you will pardon a digression, I would like to say that the San Francisco bar is known everywhere for the ability of its leaders.

THE DOLBEER CASE.

Miss Dolbeer left a very large estate and disappointed relatives instituted proceedings to contest her will. The contestants offered three physicians, none of whom had known Miss Dolbeer during her lifetime. They were asked long hypothetical questions, purporting to give the facts in the case, commencing with the alleged insanity of Miss Dolbeer's mother, then proceeding with various facts surrounding her life, her mental and emotional characteristics and finally her death by her own hand. Justice Henshaw, of the Supreme Court, said:

"These three medical experts in answer to these long hypothetical questions replied that, upon the assumption of the truth of the facts stated, they were of the opinion that 'at the time of her death' Miss Dolbeer was of unsound mind and suffering from a form of insanity known to medical science as 'simple melancholia.' The witnesses were skilled alienists, it may be conceded, but the evidence thus adduced of one who has never seen the person and who bases his opinion upon the facts given in a hypothetical question is evidence the weakest and most unsatisfactory. Such questions themselves are always framed with great particularity to meet the views of the side which presents the expert. They always eliminate from consideration the countervailing evidence which may be of a thousand-fold more strength than the evidence upon which the question is based. They are astutely drawn, and drawn for a purpose, and that purpose never is the presentation of all the evidence. It is never to present the fair and accurate view, but the purpose always is to frame a question such that the answer will announce a predetermined result. This kind of expert testimony, given under such circumstances, even the testimony of able and disinterested witnesses, as no doubt these were, is in the eye of the law of steadily decreasing value. The remedy can only come when the state shall provide that the courts and not the litigants shall call a disinterested body or board of experts who shall review the whole situation and then give their opinion with their reasons therefor to the court and jury regardless of the consequences to either litigant. So and so only can it be hoped to remove the estimate of in-

firmity which attaches at the present time to this kind of evidence."

ALIENIST IN THAW CASE.

The testimony of the alienists in the notorious Thaw case amounted to a bargain and sale of evidence. On account of the great wealth of the members of the defendant's family, it was generally conceded that they employed the expert witnesses to argue the subject of the various forms of dementia, while on the behalf of the State of New York the experts were introduced for the purpose of showing that Thaw's actions were not caused by a diseased brain. Now the tables are turned, and to prevent Thaw being incarcerated in Matteawan his physicians testify that he is of sound mind.

In this case counsel for the State of New York has been placed in a more embarrassing situation than the defendant. In 1907 District Attorney Jerome requested the court to summon alienists to show that Thaw was insane. In 1908, during the trial of the case, after calling the jury's attention to peculiar actions of Thaw, Mr. Jerome said:

"If you gentlemen can see any manic depressive in that, if there is any circulatory insanity in that, if there is any brainstorm there, if there is anything that these bug specialists (the Jerome manner of characterizing eminent alienists) you can see what I cannot see. There is no evidence of delusion in the slightest degree on his part."

In 1909 during a habeas corpus proceeding instituted by Thaw for the purpose of gaining his liberty Jerome took the position that he was insane and examined noted experts to substantiate that claim.

During this proceeding before Judge Mills of New York, seven weeks were devoted to alienists and others who testified on the subject of Thaw's mental condition. There were nearly eighty witnesses examined altogether.

In 1913, after Thaw's escape from Matteawan, Jerome appeared before the grand jury of Dutchess County and asked that Thaw be indicted for the crime of conspiracy. He had to take the position that he was sane because an insane person cannot be charged with a criminal act.

In 1914 Mr. Jerome stated in his brief in the Supreme Court of the United States:

"This department (Department of Justice of New York State) regards Thaw as insane, a menace to society, and a fugitive from justice."

So it will be seen that with the aid of alienists Jerome had him twice sane and twice insane—just as suited his purpose. What a travesty upon the laws!

FEE OF EXPERTS.

Doctor Hammond of New York received a witness fee of $500 from the state in one case. His preparation for the trial occupied considerable length of time; his attendance in court involved many days and his testimony was of the most important nature. This fee was attacked by the defendant in the Supreme Court upon the ground that the physician was prejudiced and in favor of the state by reason of its size, but the Supreme Court of New York did not agree with this contention.

Upon the subject of compensation of expert witnesses, Judge Foster, a well-known law writer, says:

"He is not a witness in the ordinary sense unless called merely to testify to some fact which he has observed—for then he is not an expert. His position and office is that of a sworn interpreter of science to the court."

Some of the states have attempted to regulate the compensation of experts; in particular Iowa, Maine, Massachusetts and Minnesota, the latter, for instance, allowing hydraulic engineers a regular per diem. Some courts have held that an expert witness may refuse to answer questions if he is not compensated as an expert. This is especially true where an expert witness is expected to give testimony of a nature which requires special preparation, investigation, research or examination of any kind by him in order to prepare himself to testify.

HYPOTHETICAL QUESTIONS.

In a murder trial pending in New York six experts were examined; most of them had a national reputation, and were called upon to answer a hypothetical question consisting of fifteen thousand words. Another hypothetical question contained twenty thousand words, and required two hours to read it. This lengthy question was propounded to Doctor Jelley, a Boston expert on insanity, in the famous Tuckerman will contest. It involved the question of the capacity of the testator. The learned doctor answered the twenty thousand word question in three words: "I don't know." A frank answer, but rather perplexing to counsel.

Taylor, in his work on the Law of Evidence, says:

"Expert witnesses become so warped in their judgment by regarding the subject from one point of view that even when conscientiously disposed they are incapable of expressing a candid opinion."

Mr. Francis L. Wellman, a well-known New York lawyer, believes that the testimony of the expert witness must be reckoned with in about sixty per cent of our more important litigated cases.

USE OF WORDS.

One of the common faults of experts is the desire to use many technical words, and thus confuse court and jury.

In a case mentioned by Gilbert Stewart in his work on "Legal Medicine," a surgeon was called to testify on a trial for assault. He stated that he found the injured man "suffering from a severe contusion of the integuments under the left orbit, with great extravasation of blood and eccymosis in the surrounding cellular tissues which were in a state of tumidity." Now, of course, after a jury has listened to such a description, it would seem that the patient was about to die or

that his condition was exceedingly dangerous, while as a matter of fact, the eminent follower of Hippocrates was describing a common ailment, which in the vernacular we call "a black eye."

A rather amusing experience occurred during the examination of Doctor Joseph Collins, a well-known nerve specialist. The case involved a damage suit against the Metropolitan Street Railway Company of New York. The attorney made nothing out of his cross-examination of Doctor Collins and threw this parting boomerang at the witness:

"Counsel—After all, doctor, isn't it a fact that nobody in your profession regards you as a surgeon?

"Doctor—I never regarded myself as one.

"Counsel—You are a neurologist, aren't you?

"Doctor—I am, sir.

"Counsel—A neurologist, pure and simple?

"Doctor—Well, I am moderately pure and altogether simple."

REMEDIES SUGGESTED.

Doctor Wilbur of Syracuse, New York, said:

"Expert testimony should be the colorless light of science, brought to bear upon any case where summoned. It should be impartial and unprejudiced."

Among the reforms proposed by physicians might be mentioned those of Doctor E. W. Taylor of Boston, who urged experts as follows:

"First. To refuse to testify upon the contingent basis.

"Second. To decline to prompt lawyers in the examination of other experts.

"Third. To maintain an inflexible determination to state the truth as he sees it."

Doctor Walton, a celebrated surgeon, writing in a Boston medical journal, said:

"I think one of the dangers in giving expert testimony is the tendency for the expert to feel that he carries the whole case on his own shoulders, and must decide questions that ought to be left to the jury. . . . Finally, the scientific witness should come into court with clean hands and a pure heart, with sincerity of purposes, with a tendency and desire to ascertain and recognize truth whenever it may be found; to conceal nothing, mindful of his oath, which requires him to speak not only the truth, but the whole truth."

Charles W. Eliot, former president of Harvard University, in discussing the popular dissatisfaction with the administration of justice in the United States, claims that the employment by the court of official experts is the most promising of all legislation proposed. Here is the view of a great scholar on this phase of law reform.

The old Roman law provided that a judge could summon experts for the purpose of giving him information.

In 1870 Germany adopted a law providing for expert witnesses appointed by the court. From various sources I learn that it has met with great success.

The Italian courts appoint a commission of experts for the purpose of giving testimony.

The English courts call witnesses on their own motion, especially when technical subjects are involved.

In Michigan an act was passed in 1907 merely limiting the compensation of expert witnesses.

In 1911 an act was introduced in the Senate and Assembly of New York for the purpose of regulating the introduction of medical expert testimony. The act failed because it was claimed that it attempted to create a "doctors' trust." Mr. Clemens Herschel, a noted consulting engineer, stated that if all experts had been included in the bill such an objection could not have been raised, and the bill might have passed.

From my own experience and from talking with many judges, it would seem that a great many of the evils could be eliminated by the court's appointment of experts, to be selected by a judge of the county in which the case is tried, or if desired by the presiding judge in counties like San Francisco and Los Angeles. This expert to have no connection with any public utility corporation or those establishments where personal injury actions are frequently originated and developed. Some maintain a commission would be better than one expert, because we must recognize the honest difference of opinion—even among experts.

EXPERTS SHOULD BE COURT OFFICERS.

In a city like New York the Surrogate (corresponding to our probate judge) frequently has before him will contests in which very large amounts are involved. Of course the most skilful handwriting experts are employed for the purpose of aiding the contestant or respondent in the case. Surrogate Calvin in rendering a decision in a will contest said:

"In all cases wherein expert testimony is required the expert should be employed and paid by the court and be regarded as a court officer."

This statement was made after a long experience in probate hearings.

Hon. G. A. Endlish, a noted Pennsylvania jurist, in an address before the Law Academy of Philadelphia, suggested the following:

"First. Formation of a stricter definition of expert capacity.

"Second. The reasonable limitation of the number of experts to be called in any case.

"Third. The payment of expert witnesses out of the public treasury, at least in the first instance."

By making experts the appointees of the court, and their compensation not only sure but independent of the effect of their testimony, a prominent cause of bias would be eliminated.

Doctor Andrew S. Lobingier, acting for the Los Angeles County Medical Society, and myself, as chairman of the Bar Association of the same county, prepared an act to regulate medical expert testimony and submitted the same to the legislature of 1911. The act passed in the Senate, but no one urged its adoption by the Assembly. Last

year Honorable Frank F. Oster, judge of the Superior Court of San Bernardino County, and Doctor Lobingier and myself met and discussed the framing of a measure so that same would cover all experts. We were joined by Mr. Derleth of the Pacific Coast Consulting Engineers' Association. The bill I am about to read was mainly written by Judge Oster, and while the Los Angeles County Medical Society, the Committee on Amendment of Laws of the Los Angeles Bar Association, and Judge J. Perry Wood, chairman of a committee of the bench of Los Angeles County appointed to examine this bill, made a few suggestions, it is practically the same as originally drawn.

Of course the two principal reasons for the selection of the expert by the county are:

First. That we would obtain impartial testimony, and there would be no object in prejudicing the case in favor of any litigant; and

Secondly. A better class of experts would appear in our courts because the judge would seek to have the ablest physician or engineer or handwriting expert appear, for the purpose of giving testimony.

AN ACT

To amend the Code of Civil Procedure of California by adding thereto a new section to be numbered and known as Section 1871, relating to experts, their appointment by the court, or a judge thereof, and providing for their compensation and manner of examination as witnesses.

The People of the State of California do enact as follows:

Section 1. A new section is hereby added to the Code of Civil Procedure of California, to be numbered and known as Section 1871, and to read as follows:

1871. Whenever it shall be made to appear to any court or judge thereof, either before or during the trial of any action or proceeding, civil or criminal, pending before such court, that expert evidence is, or will be required by the court or any party to such action or proceeding, such court or judge may, on motion of any party, or on motion of such court or judge, appoint one or more experts to investigate and testify at the trial of such action or proceeding relative to the matter or matters as to which such expert evidence is, or will be required, and such court or judge may fix the compensation of such expert or experts for such services, if any, as such expert or experts may have rendered, in addition to his or their services as a witness or witnesses, at such amount or amounts as to the court or judge may seem reasonable. In all criminal actions and proceedings such compensation so fixed shall be a charge against the county in which such action or proceeding is pending and shall be paid out of the treasury of such county on order of the court or judge. In all civil actions and proceedings such compensation shall, in the first instance, be apportioned and charged to the several parties in such proportion as the court or judge may determine and may thereafter be taxed and allowed in like manner as other costs. Nothing contained in this section shall be deemed or construed so as to prevent any party to any action or proceeding from producing other expert evidence as to such matter or matters, but where other expert witnesses are called by a party to an action or proceeding they shall be entitled to the ordinary witness fees only and such witness fees shall be taxed and allowed in like manner as other witness fees. Any expert so appointed by the court may be called and examined as a witness by any party to such an action or proceeding or by the court itself and, when called and examined by the court, may be cross-examined by the several parties to the action or proceeding in such order as the court may direct. When such witness is called and examined by the court, the several parties shall have the same right to object to the questions asked and the evidence adduced as though such witness were called and examined by an adverse party.

The court or judge may, at any time before the trial or during the trial, limit the number of expert witnesses to be called by any party.

ADVANTAGE OF BILL.

An examination of this bill shows it has many advantages:

First. It covers all proceedings, civil and criminal.

Second. It provides that the judge may, on the motion of either of the parties, or, if he desires, he may take the initiative himself, and appoint one or more experts to investigate and testify.

Third. It provides that the court may fix the compensation—because it will differ as to the time employed, the matter involved, the extent of the examination, the character of the expert, and the expenses incurred by him in making his report.

Fourth. In criminal cases the charge is properly against the county. For instance, courts and juries are imposed on frequently by the plea of temporary insanity. An alienist employed by the state would give an unbiased report regardless of its effect.

DEFENSE OF INSANITY.

The defense of insanity is so often put forward by defendants charged with criminal acts that for the last twenty years trial courts have been cautioning juries, and the Supreme Court has upheld this charge of the trial judge to the jury:

"The defense of insanity is one which may be and sometimes is resorted to in cases where the proof of the overt act is so full and complete that any other means of avoiding conviction and establishing punishment seems hopeless. While, therefore, this is a defense to be weighed fully and justly and when satisfactorily established must commend itself to the favorable consideration of the humanity and justice of the jury they are to examine it with care lest an ingenious counterfeit of such a mental disorder should furnish immunity for guilt."

Fifth. In civil cases the compensation shall be taxed as costs in the case. The defeated party would have to pay in the end.

Sixth. Nothing in the act prevents any party to action calling other experts. If he is dissatisfied with the court's expert he is not precluded by their testimony.

Seventh. The act provides that the experts called by the court may be examined and cross-examined by the several parties. The rights of the litigants are thus safeguarded. If any prejudice exists in the mind of the court's expert it can be brought out. Again, even though they are called by the court and examined by the court, nevertheless the parties have the right to interpose the usual objections to questions asked.

Eighth. When the bill was first submitted to the judges of the Superior Court of Los Angeles County an amendment was offered providing that "the court may in its discretion advise the jury, if there be one, that such expert or experts had been appointed by the court." We have eliminated this phase because Article VI, Section 19, of the Constitution of the State of California, provides: "Judges shall not charge juries with respect to

matters of fact, but may state the testimony and declare the law." Of course, this provision of the Constitution is "mandatory and prohibitory" (Article I, Section 22). As Judge Oster says, the Supreme Court of California has repeatedly held that the trial court shall not call attention to one witness or class of witnesses to the prejudice of others. As a matter of fact, counsel on either side can bring to the attention of the jury the fact that the expert was appointed by the court.

Ninth. Another feature which is so essential to have incorporated in our statutes is that portion of the act which provides that the court may limit the number of experts to be called by any party. The unnecessary number of experts called in homicide cases and in actions relating to the condemnation of land has seriously affected the transaction of the business of our courts and hardly a judge on the bench today does not go out of his way to denounce the present latitude permitted in these matters.

Tenth. The act taken as a whole is fair to all. There is no joker in it.

In 1913 this bill passed the Senate without a dissenting vote, but did not come to a vote in the Assembly.

The Oster bill should become a law and thus California will be the pioneer in this much needed remedial legislation.

OFFICIAL MEDICAL EXPERTS.*

By ROSCOE S. GRAY, San Francisco.

(a) The Sociological Relationships of the Problem.

Of course it is understood that the phrase "Official Medical Experts," refers to such "experts" as instrumentalities (whether as witnesses or otherwise) in the judicial determination of controversies.

The fact that the American Medical Association, as the result of three years consideration of the questions relating to expert medical testimony, reached in June, 1914, the conclusions shown at pages 100 and 110 of the Sixty-third volume of the Journal of that Association, justifies the proposition that in the recommended conferences between the medical and legal associations, careful consideration should be given to the sociological relationships involved.

But how shall the verities of life be made to flame forth upon the printed page? All life is a paradox and society is a wilderness of seeming contradictions.

Physical human life is the fruit of an elemental physical passion most easily debased and the debasement of which has become the degradation of civilization and the greatest social and medical peril of the race.

A state of international warfare is devastating a large portion of the civilized world.

Yet against that race peril has arisen a mighty sociological force and throughout the nations we find ample evidence of antipathy to war.

That sociological force battling against that race peril and which has enlisted in its ranks as leaders many from both the medical and legal professions, is education.

The Baroness Bertha von Suttner, who died June 21st, 1914, was no mean authority on "Peace." She was at one time the secretary to Alfred B. Nobel, who established the Nobel Foundation, and as a champion of "the brotherhood of nations," she is said to have been the inspiration that prompted him to offer his peace prize, and in 1905 she received its award. In writing to me from Chicago (where she had gone in the interests of peace and education) under date of September 14th, 1912, she said "Sociology is the scientific road to the world's peace."

It is almost inconceivable that anyone would today disagree with what Jane Addams said September 30th, 1914, as she stepped upon the train in New York for Chicago, referring to the European war, "The whole social fabric is tortured and twisted."

Yet there have been those who lauded war and there are still those who believe that war cannot be avoided. There have been and it would seem there still are those who preach the doctrine that the scarlet woman is the necessary guardian of the purity of the home.

And there are plenty of bright and shining lights in the legal profession that believe justice can be attained in court only through the most rigorous and relentless methods of warfare.

Where and when shall we have a parliament of nations, without distinction as to race or creed, called to consider ways and means for creating and advancing that international education which will develop the power of all nations to work together for the good of the human race?

In criminology, in the office of the public defender provided for in the freeholders' charter of the County of Los Angeles, the legal profession in the United States has found an example which is awakening the bench and bar from the Atlantic to the Pacific to the unspeakable barbarism of our jurisprudence in court work.

It was natural that we should first awake to the criminal side of our jurisprudence as presenting the futility of our court and police methods for reaching the truth with many frightful results, and The American Institute of Criminal Law and Criminology, an outgrowth of the National Conference on Criminal Law and Criminology held in Chicago in June, 1909, is doing a wonderful work in bringing to bear the experience and help of all classes concerned upon the problems connected with the administration of punitive justice, including the treatment of criminals. And we are now beginning to seriously question the very foundation of a justice, or a system for the administration of justice, that is founded upon the principle of punishment.

Nor are we getting off the track of our problem by this reference as is well shown by the fact that perhaps the best presentation up to that time, of medical expert testimony and the methods of improving the practice, which is available, appear at page 41 et seq. of the issue of July, 1910, of the Journal of that Institute. It is a revision by Hon. William Schofield, Judge of the Superior Court of Massachusetts, of his address read at the semi-annual meeting of the Suffolk District Medical

* Read before a joint meeting of the Bar Association of San Francisco and the San Francisco County Medical Society, October 13, 1914.

Society, October 30, 1909. He opens that presentation of the subject as follows:

"It is plain that medical expert testimony has fallen upon evil days. There is a widespread belief that it is entitled to little weight in courts of justice. The principal ground of complaint is that the medical expert, while nominally a witness, is in fact a partisan or advocate, who takes sides in the case and uses medical science merely as a means of supporting that side which he represents."

What then shall we say of a system of jurisprudence that compels for all practical purposes the surrender of trial court work into the hands of partisan advocates who are expected by their clients and the public and the judges and the jurors, not to search for nor reveal nor to allow the truth to escape into the light of human knowledge except in so far as it tends to win the case for the client?

As futile as the battlefields of the nations to settle international truths must be the battlefields of the courts under such a system, and the trouble with expert testimony, whether medical or otherwise, is found in that system of jurisprudence, and so long as we seek to square the practice of bringing to our aid the expert with the methods of war we shall have at best mere palliations of vice.

May the time soon come when courage and wisdom will unite in boldly taking up the fundamental and vital defect in our present administration of justice, its war basis and method. In the meantime we shall continue and, strange to say, more hopefully perhaps in the field of criminal law than in that of the civil, to try and at least partially solve the problem of securing more aid from the expert in the administration of justice, even when we are compelled to take that expert as a witness and handicap him with all the rules of evidence and the admission and rejection of evidence applicable to witnesses as mere pawns upon the chessboards of the courts.

Although not available when this paper was written, it would seem almost unforgivable at this time not to call attention to the testimony of Walton J. Wood, the Public Defender of Los Angeles County, California, given very lately before the United States Commission on Industrial Relations, and to quote enough therefrom to indicate its relative value.

"CHAIRMAN WALSH. Does the line of demarkation still exist between the prosecutor's office and yourself just like it did in the old days between the defendant's lawyer and the prosecution? Are the lines drawn? Are you at war or is there a sort of understanding?

"MR. WOOD. We are not at war, but we represent our respective clients just as faithfully as under the old system, except we are trying harder to carry on the work with the object of bringing about justice and I think we can go to the district attorney and have cases dismissed at times when we tell him what the evidence is that we have. He will take our word for it.

"CHAIRMAN WALSH. They will take your word for it quicker than under the old paid system?

"MR. WOOD. Yes, sir, I think so. We had a murder case here the other day, for example. The question was the man's sanity. That was the only defense. It was a very close case. We united in asking the court to appoint an expert. We did not go out and each hire experts for the county to pay, but we asked the court to hire the experts, and we would take their judgment, as far as expert opinion went. That would be the only expert opinion in the case. That is an example."

But before turning to the specific topic of the function of the expert in the administration of justice it seems that we should glance at certain fundamental changes in the sociological aspects of the avocations of human beings. We have come to the point of practical agreement that public utilities which are inherently monopolistic cannot be safely left to unrestrained private exploitation. There are significant signs that the public welfare rests upon a deeper principle than is thus stated and one which tends to take both the medical and the legal profession out of the field of private employment to a very large extent at least. As to the medical profession the social anachronism involved in the present system is very strongly and eloquently presented by Dr. James P. Warbasse, at page 264 et seq. of the issue of July 18th, 1914, of *The Journal of the American Medical Association*, under the title "The Socialization of Medicine." In that article he says: "At the same time the free administration of justice, as well as of health agencies, should become a reality. Under such a regime the expert medical witness should be the agent of the people. His function should be to give impartial information. He should be in the service of all the people in the interest of truth and justice, just as the judge should be: and securing justice should not be a matter of barter and price any more than should the securing of medical help." He gives a most brilliant example of the shortsightedness of our present medical sociology when he says: "I believe that the wives of coal miners and iron workers are as worthy of the best scientific attention and the tenderest care in the hours of their need as are the wives of the rich. I believe that they should have it, not as a charity or welfare enterprise, but as a matter of social justice. It is their right."

Then if life, liberty or property is at stake in the court room, why should the rich command the services of the expert and the poor go without or receive it haphazard or as a charity?

One only needs to read such an article as the one above noted by Dr. Warbasse, and to follow such publications as the Bulletins of the American Academy of Medicine devoted to medical sociology to realize the enormous strides already made and the still greater work opening up sociologically, in contrast to the private employment competitive system, for the medical profession. And one only needs to watch the development in such fields as workmen's compensation to realize how rapidly the scope of private warlike litigation is being cut down. Notwithstanding all this, having reviewed the wider relationships in a sociological way of our problem, we must come back to the precise

question, "What is the sociological function of the medical expert in our present court administration of justice?" It seems to be the bridge by which, in trying to determine the truth involved in contention, while limiting ourselves in the main to warlike methods, we are almost blindly striving to apply scientific principles in seeking to ascertain such truth.

We probably have as yet only a dim presentiment of the sociological development involved in this subject.

With due credit to Dr. William Healy for certain phrases as well as ideas in his paper on "Present-Day Aims and Methods of Studying the Offender," (Bulletin of the Am. Med. Assn., Vol. 14, page 342), and applying them, as we well may to the broad field of jurisprudence, it may be noted that the late and rapid development of the relation between the medical and legal professions in what has been called the "science of adjustment of human relationships," is almost startling. The so-called criminal and the recalcitrant debtor are alike in that they are "out of line with the requirements of society."

All really important judicial procedure presents a "social problem" and "The solution of the problem involves adjustment between social possibilities and individual tendencies."

The legal profession ought to be able to settle out of court all but a negligible number of controversies except those that point to if they do not cry aloud for "rectification of anti-social conduct." The science of jurisprudence is not a "science of adjustment of human relationships," and perhaps it never can be, but it should at least be controlled by such a science. It is true, as Dr. Healy notes, that there is hardly a suggestion of the existence of such a science in the "measures of adjustment which are offered under the auspices of the law."

There is certainly very strong reason for believing that, even within the present restricted lines laid down for the introduction of testimony in court, practically all the benefits of official expert witnesses can be obtained with very little, if any, change in the present court machinery, but it will require an immense change in the disposition and methods of the bench and bar.

It has already come to be generally recognized that there is a "science of the prevention of the development of criminals," and we all know this is very largely due to the efforts of the medical profession. Yet even there, and on the part of the medical men, a serious question has been raised as to the matter of education. Prof. Robert H. Gault, a leading criminologist, takes the position that "the schools of medicine usually wholly neglect the psychologic element in their curricula, or if they attend to it at all it is in a most inadequate way," and as a psychologist he points out in his paper on "The Physician in the Service of Criminology," published in the *Bulletin of the American Academy of Medicine*, October, 1913, what he deems some of the evil results of this lack of education.

But whether or not the medical profession is laboring under a serious lack of attention to psychology in its schools, it has been made very plain to the legal profession where its trouble in education lies.

A special committee of five among the greatest recognized leaders in jurisprudence, in making a Preliminary Report to The National Economic League on Efficiency in the Administration of Justice, said:

"In no state is there any requirement that those who come to the bar have that minimum of general education which will enable them to deal properly with the social and economic questions which our polity commits to the courts."

But the indictment of that committee against the public as responsible for the present condition of affairs in educational jurisprudence, if not the practice itself, is really still more severe, and runs as follows:

"So long as the public in so many of our jurisdictions insists upon treating the practice of the law as a mode of earning a livelihood which should be open to everyone and refuses to exact those requirements of preliminary education and thorough professional training which are required not merely to make the lawyer an efficient agent in the public administration of justice through thorough presentation of causes, but also to make him an effective public servant through initiation and promotion of improvements in legal institutions and doctrines, attempts at reform addressed only to judicial machinery will be quite futile."

It would thus seem that broadminded and progressive as the medical profession has been, it still stands in serious need of the science of psychology, and the legal profession stands in even still greater need of the science of sociology or the social sciences. If these needs cannot be met through the curricula of the schools, then it goes without saying that the professional organizations must supply the need.

Personally and as to the legal profession, I am satisfied this need should be first recognized and perhaps satisfied through the Bar Associations. Woe unto the society that expects, to say nothing of demanding, from either the profession of law or medicine mere palliatives.

The medical profession has presented to the legal a wonderful example of devotion to prevention as preferable to cure, but neither profession should yield to the priest or the pastor as the first and only and real justification for entrance to and remaining in the profession an honest and earnest desire and ability first of all and in all things to serve society.

The legal profession long ago learned to lean very heavily upon the medical profession when seeking justice in the courts but, perhaps unfortunately, the rules of evidence as to the admissibility of so-called opinion evidence, have opened the door on the one hand to great abuses and closed it on the other in large degree as to great possible benefits. To the thoughtful in the legal profession an opportunity was offered nearly twenty years ago to consider this phase of the matter and it may not be out of place, even now,

to note what Dr. Thayer, as the celebrated Weld Professor of Law at Harvard University said in his Preliminary Treatise on Evidence at the Common Law as to the operation of the so-called rule forbidding the giving of opinion evidence.

We almost see a prophecy therein, although somewhat slow of fulfillment.

At page 523 et seq. he said:

"It is traceable easily to the same source as the hearsay rule. It was for the jury to form opinions, and draw inferences and conclusions, and not for the witness. He was merely to bring in to the jury, or the judge, the raw material of fact, on which their minds were to work. If the witness spoke directly to the very fact in issue, the jury were to consider whether to believe his statements or not; if to other facts, of an evidential sort, then the jury were to judge of their import and their tendency. The witness was not to say that he 'thought' or 'believed' so and so; it was for the jury to say what they thought and believed. The witness must say what he had 'seen and heard'; he was an *oyant et veant*. But then, simple as this sounds, the distinction could not serve in many nice and critical inquiries. In the loose and easy administration of the law of trials that existed as long as juries went on their own knowledge, and needed no witnesses or evidence at all, and at a time when, even if they had witnesses, they were at liberty to disregard them and to follow their own personal information, it was possible to get along without nice discriminations; so that the law of evidence had hardly any development at all until within the last two centuries; and it was but slight before the present century. In a sense all testimony to matter of fact is opinion evidence; i. e., it is a conclusion formed from phenomena and mental impressions. Yet that is not the way we talk in courts or in common life. Where shall the line be drawn? When does matter of fact first become matter of opinion? A difficult question; but some things are clear. There are questions which require special training and knowledge to answer them. A jury, unless it be one of experts, and, as such, ill adapted, perhaps, for the general purposes of trials, cannot deal with them. On such questions, then, the ordinary jury may be assisted by skilled witnesses, who give their opinions. There are other questions, not requiring skill or training, but only special opportunities of observation, like handwriting and the value of property, on which opinions of ordinary witnesses having such opportunities may be given. How far does this go? There is much apparent perplexity in the cases. In a very great degree it results from differences of practical judgment in applying an admitted rule,—the admitted rule being that opinion evidence is not generally receivable, and the difference arising from differing judgments as to what is and what is not really to be called opinion evidence in the sense of the rule. It has been said, judicially, that 'there is, in truth, no general rule requiring the rejection of opinions as evidence.' Without acceding quite literally to that, there is ground for saying that, in the main, any rule excluding opinion evidence is limited to cases where, in the judgment of the court, it will not be helpful to the jury. Whether accepted in terms or not, this view largely governs the administration of the rule. It is obvious that such a principle must allow a very great range of permissible difference in judgment; and that conclusions of that character ought not, usually, to be regarded as subject to review by higher courts. Unluckily the matter is often treated by the courts with much too heavy a hand; and the quantity of decisions on the subject is most unreasonably swollen."

Can there be any doubt in the face of such a presentation of the rules of practice as to the admission of evidence, that the real difficulty for the past quarter of a century in the matter of a proper investigation into the truth by the aid of medical expert testimony has been almost entirely due to lack of proper education of those coming to the bar and lack of understanding by the people as to what is needful in that behalf?

OFFICIAL MEDICAL EXPERTS.*

By WILLIAM M. CANNON, San Francisco.

The activities of the so-called three learned professions, religion, medicine and law, carry them along lines which are usually quite distinct. Occasionally, however, their functions to some extent merge or blend with one another.

In the administration of the law, religion and law very rarely come into contact. However, they are not absolutely divorced, because occasions arise when the consideration of questions of ecclesiastical law is necessary to the decision of questions of fact in legal proceedings. I remember one instance where, in order to determine a controverted question of fact, it was necessary to call experts on ecclesiastical law and to delve into decretal orders of popes and councils made hundreds of years ago.

Religion and medicine seldom trespass on each other's preserves. Representatives of these professions often meet at the bedside of the dying but they have their separate duties to perform and there is no intermingling of activities.

Medicine and law, however, are constantly coming together, and frequently become inextricably blended; but when they do so there is no clash of authority. On the contrary, they work in entire harmony, medicine furnishing necessary facts and law the rule of action to be applied to them. Thus medicine frequently enables law to solve complicated questions of mixed law and fact. In such cases each, without the aid of the other, would be powerless to accomplish beneficial results.

Medical jurisprudence, sometimes called forensic medicine, embraces a wide range of subjects. In both civil and criminal courts questions are constantly arising where material facts cannot be determined without recourse to medicine. Such facts can be supplied only through the much abused medical expert.

Cases involving causes of death or injury, relations of the sexes, sanity, paternity, besides numerous others, require the assistance of the medical

* Read at a joint meeting of the Bar Association of San Francisco and the San Francisco County Medical Society, October 13, 1914.

expert, whose examination covers an infinite variety of subjects concerning which the lay mind is utterly lacking in knowledge. Upon such subjects, therefore, the law must look to the medical expert as its only source of enlightenment.

The importance of forensic medicine, and the law's helplessness without it, renders it vitally necessary that medical experts should be above all else, honest and sincere in their testimony. As the cause of death or injury is frequently obscure and depends upon a nice and delicate balancing of symptoms, it must be apparent that unless the medical expert is honest he is a positive injury instead of an aid to the law. Even great ability is more harmful than otherwise unless combined with an honest and sincere effort to arrive at the true solution of intricate medical questions. Therefore the one great quality to cultivate in the medical expert is common honesty. This is not a criticism of the medical profession or of medical experts generally. The profession is prolific of high-class, conscientious, scientific men whose integrity is unimpeachable and whose testimony cannot be affected by any unworthy motive or consideration. Such men "hew to the line, let the chips fall where they may." The result of my experience with such experts is that litigants have nothing to fear from them.

But it is regrettable that this certificate of character cannot be given to all medical experts. Too frequently we fail to receive their honest opinions. Too frequently their testimony, when not indicating gross ignorance, is swayed by interest, prejudice, or other improper motive. 'Tis a consummation devoutly to be wished, therefore, that medical experts should always give testimony frankly and honestly and without considering its effect upon the outcome of the trial; but this utopian condition cannot be expected to result from the appointment of official medical experts.

Medical experts, generally speaking, are of two classes: (1) Those testifying to facts within their knowledge and giving opinions based thereon, and, (2) those giving opinions based upon an assumed state of facts or hypothetical case.

Official medical experts cannot enter the field covered by the first class. In such cases the witness is usually the attending physician. He testifies to the result of his own observations and bases his expert opinion thereon. It is only in cases where an opinion is to be given upon an hypothetical case or upon an examination of a patient plus assumed facts, that the services of an official medical expert could possibly be required.

Sometimes, especially in suits for damages for personal injury or death, the medical attendant testifies to facts within his knowledge and observation, and he is also questioned as a medical expert, both upon his own knowledge and the assumed existence of other facts. For instance, a medical attendant will not be permitted to give an opinion based upon his own personal observation of a patient and the history of the case as related by the patient. What the patient has told him is regarded as hearsay. In dealing with the case privately the physician forms his opinion and acts both upon what he discovers objectively and the history of the case. In court, however, while his testimony is receivable as to objective symptoms, he cannot testify to subjective symptoms nor can he give the history of the case. Therefore when asked his opinion as an expert he bases it partly on his personal knowledge and partly on the history of the case as given by the witnesses in court, not as given to him privately.

In actions of this kind the great question always is whether the condition under investigation was caused by trauma. If so, the defendant may be held responsible for the injuries or death, otherwise not.

In many cases this question is not one of expert testimony at all. If a person has his foot crushed in a railroad accident the injuries are obvious to any person. The physician, however, by reason of his peculiar knowledge, can describe the character and extent of the injuries and give his expert opinion as to the consequences, whether temporary or permanent. But cases often arise of such an obscure character that it is only through the opinion of a medical expert that any light can be thrown on the subject at all. For instance, constant pains in the spine are complained of by a patient who asserts that they were not present before the accident but always present thereafter. The medical expert, upon examination, finds nothing objective. The delicate question then arises as to whether, from a mere complaint of pain, a subjective symptom, the conclusion of spinal injury can be drawn. Again, a nervously constituted person becomes involved in an accident and complains of increased nervousness as a result. The symptoms of nervous shock being mainly subjective, it becomes an exceedingly difficult and delicate matter for any expert to determine to what extent, if at all, the previous nervous condition has been aggravated by the accident.

Instances could be multiplied which would demonstrate to what a great extent litigants must rely upon the honesty of medical experts, and how easy and safe it is for dishonest medical experts to thwart justice by giving rash or dishonest opinions. In all obscure cases it is just as easy and safe for an expert to testify one way as the other. Consequently, if an unprincipled practitioner can collect a large outstanding bill only by winning a case for his patient, the temptation to depart from the strict line of righteousness is usually overwhelming.

That abuses exist along this line there can be no question. I could fill a volume with instances coming under my personal observation where the testimony of medical experts has been influenced by interest in the result of the suit, and by considerations utterly at variance with the facts.

The appointment of official medical experts would not remedy the difficulty because, as already explained, their field must necessarily be limited, and because the abuse exists mainly with the physician who has a pecuniary interest in the result of his own testimony, and who therefore goes to great lengths in assisting his patient to win the case.

As the evil is one which cannot be reached by official medical experts, the question is, how can it be uprooted? In my opinion the solution of the problem is in the hands of the physicians themselves, acting through their medical societies.

The principal thing is to produce in court only honest opinions and to eliminate interest, prejudice, and other unworthy motives. This can be accomplished if medical societies will, by the adoption of strict by-laws, provide for the appointment of a committee of experts and require every physician who is to be called as a witness, to lay the case in advance before such committee. By such means the experts on opposite sides would be brought face to face before the committee for consultation and examination, after which both would be free to testify. If they are honest they will listen to the advice of the committee precisely as they would listen to that of a consultant in any case.

With honest and conscientious witnesses (with which the profession abounds) the probabilities are that the consultation will bring about unanimity of opinion, and there will be no conflict in court.

In the case of experts called to give opinions on a hypothetical case or upon the result of an examination in connection with assumed facts, the by-laws could provide that such an expert should always consult with the committee, both as to facts appearing upon the examination and as to the hypothetical case. If, after consultation with the committee, there should still be difference of opinion, such difference would at least be an honest one.

It may be objected to this course that courts can, by process of subpena, force medical experts to testify. The answer is that no court can force any medical expert to give an opinion until he has one, and he is not required to have one until he has exhausted all legitimate means of forming a correct one.

Should physicians outside of the society refuse to appear before the committee of experts before testifying, such refusal of itself would probably be sufficient to impeach their testimony and render it unworthy of belief by a jury. Certain it is that as between an expert witness who gives an opinion formed after a full study of authorities and consultation with eminent associates, and one who refuses to consult and sets himself up against the consensus of opinion of his brothers, a jury should have little difficulty in determining where the truth actually lies.

Official medical experts appointed by the court on motion of either party and chosen from such a committee of experts would be of great benefit in arriving at the truth in obscure cases. To that extent I favor the appointment of official medical experts; but, as already explained, the evil complained of cannot be eradicated except by some drastic action by the profession itself.

In the last analysis, the opinion of a medical expert is of little consequence unless the jury has confidence in him and is convinced of his honesty and sincerity. Where it appears that a physician is interested in the result, or is woefully ignorant, as too frequently appears, or has not prepared himself sufficiently for the ordeal of cross-examination, or where for any reason the jury may readily conclude that he is not fair, his testimony carries little weight. If, to oppose such a witness, either party should call men of standing who have not hesitated to consult fully with their fellows in the profession before attempting to decide, by their mere opinions, delicate questions of fact involving serious consequences, it is plain that juries whose only desire is to arrive at the truth, would never hesitate to condemn the expert who, for his own personal ends, sets up his opinion in opposition to that of the combined medical fraternity.

My conclusion is that medical experts, while they would undoubtedly assist in remedying the evil, would not eradicate it, but that great good might be accomplished by putting in force some such plan as above outlined.

THE MEDICAL EXPERT IN AMERICAN JURISPRUDENCE.*

By ANDREW STEWART LOBINGIER, A. B., M. D.,
Los Angeles.

There has been a growing sentiment in American courts of justice that the testimony of the expert witness must be received with a conscious discount and reserve. It is widely accepted that the abuses which attend the offering of expert testimony are many and flagrant. But it is equally obvious that these abuses are as clearly the outgrowth of the present method of procedure as they are of the mental obliquity of the witnesses who are called. For more than a generation the testimony of the medical expert has been a purchasable commodity. From a factor whose learning and experience should prove a distinct assistance to the court in determining the adjudication of technical difficulties, the medical expert has, by virtue of the false position he has been brought to occupy, become an object of ridicule and contempt.

There are several impressive reasons for this: Through the present method of choosing the expert witness, he is at once the victim of bias and becomes an advocate for the side that employs and pays him. Experts are not selected chiefly on account of eminent fitness or special training in the subject on which testimony is to be offered, but as to whether they shall prove to be strong partisans and clever defenders of the side which employs them and of which for the time being they are a willing appanage. Such a system of selecting the expert and the coarse and frequently incompetent methods of counsel in direct and cross-examination, have created an aversion among scholarly professional men for appearance on the witness stand. The result is that the best talent is rarely obtainable and the choice must lie amongst duller minds, less sensitive to the harsh usages of a court of law.

We may assume that counsel is not supposed to have an intimate acquaintance with the technical knowledge of the expert whose evidence he is seeking to develop. But no one who has had experience in court has failed to note the awkward

* Read before a joint meeting of the Bar Association of San Francisco and the San Francisco County Medical Society, October 13, 1914.

efforts counsel is ofttimes guilty of in interrogating the witness and how the important questions necessary to draw forth a truthful and illuminating exposition of the case are never asked. It would appear at times as though court, counsel and witness, whose chief function should be to elucidate to the jury the simple truths of science, had failed utterly to achieve that end and purpose. Are these stupidities the inevitable concomitants of a trial at law or are they the impedimenta which a decadent jurisprudence has helplessly carried in its course? We have a right to require the sagest learning and highest qualifications in the expert witness; what have we a right to expect in the intelligence of the barrister who interrogates him?

Neither the practice of law nor the practice of medicine need ever depart far from the realms of common sense. Are not our courts the forums of justice? If this be true, then in the taking of expert evidence we must insist that conditions are permitted to prevail which shall keep inviolate the plain and obvious facts of science and not enshroud their simple relating in the befogging and boisterous controversies of partisans.

Under the present system of selecting the expert witness no restrictions as to qualifications or the number of those who shall be called is prescribed by law. It is therefore manifest that the number of so-called experts who receive their compensation at their own appraisement from the side employing them, is limited only by the capacity of the purse of the employer. This fact and the startlingly opposite testimony of professional men of equal standing not uncommonly converts a trial into a travesty from which neither court, counsel nor jury can extricate it.

Other evils complicate and prolong the action and prove subversive of the ends of justice. One of these is the lengthy and involved "hypothetical question," the answer to which has been prearranged before the question is asked.

Another is the custom once prevailing, but I trust, rapidly becoming obsolete, of opposing counsel to anger, disconcert and unhorse the witness by every artifice of smart and offensive aggression which could be employed. No physician or surgeon who values his self-respect or cherishes the dignity which years of learning, experience and culture have brought to him, will voluntarily subject himself to such an ordeal of abuse for any compensation which can be named.

The expert witness should not only be a scholar in the special learning he is called to reveal to the court and explain to jury, but he should be graciously shielded and encouraged, so that his testimony may be couched in clear language and be most informing. A very eminent jurist writing on this subject has said: "Scientific opinion to be of controlling value can be given only under conditions of mental repose. The haggling sharp interruptions, uncalled for wit, insolent comment and other too common features of important civil and criminal trials are not such conditions. While they put some witnesses on their mettle, they throw the majority and the more competent into a state of mind in which all sorts of stupidities may be expected."

If the vice of prejudice is permitted to dominate the selection of the expert witness, then a prejudiced and superficial opinion need not surprise us. Nothing can rescue the "expert" from this obliquity whose measure of integrity is the price paid for his time in court. Such a witness invites contempt; he inspires abuse; he arouses the belligerency of counsel and incites to disconcerting and embarrassing scenes, utterly unworthy of the respect due to members of honorable professions. It is common knowledge that many of the most distinguished physicians and surgeons in America refuse to appear in court because the method of choosing the expert witness and the manner of his examination on the stand, are what they are in this country.

In Germany the appointment is made by the court and the expert is required to appear whenever called by a judge. A penalty is attached for disregarding the summons, and the commonwealth provides a moderate fixed compensation together with expenses for appearance and testimony in court. The medical expert in Germany may therefore be regarded as an officer of the court; and the same relation exists in most all of the other continental countries. It is regarded an honor and distinction to be thus designated, and there is attendant on the office every courtesy and dignity to which its responsibilities should entitle it. But the utmost care is observed in the choice of physicians and surgeons as official experts that only men of known special scholarship and highest training and personal integrity are selected.

In England and her colonial possessions and in the United States to a large exent, the expert is selected by counsel and the court is not consulted.

If expert testimony is to continue to be heard in American courts, then it is apparent that the selection of the expert must be hedged about by such appropriate measures as shall ensure the selection of men of competent ability and devoid of bias. It has been held sturdily by members of the bar that no man can be found who is quite free from bias; that the men who are called are usually competent as experts; and that no member of the bar would call a man as expert about whose qualifications there could be any question of competency. Yet we have seen on a number of occasions obstetricians, dermatologists and genitourinary surgeons taking the stand as expert alienists to pass on the sanity of a homicide.

We have known "experts" celebrated for their flexibility of intelligence to be called by the state, which failing to measure up to the stipulated fee, these same "experts" became an equally ready and willing succor to a struggling defense. Must we continue to endure such ineptitudes in jurisprudence without one restraining word from the court to mitigate the travesty? We are answered that the rules of evidence do not contemplate that the court should pass on the credibility of a witness beyond his statement of fact or opinion.

Litigants must be left free to select whom they may to sustain their argument. Counsel addresses its energies toward the choice of witnesses whose testimony shall add the greatest weight and emphasis to their cause.

Who then may be properly designated as expert on a question of medical science? Is it not the man who possesses liberal learning, high ethical character, scholarship and extended training in a special branch of medicine or surgery and a reputation as a studious and conscientious practitioner? Such men may be found in every populous community in this country. If they are rarely seen on the stand as experts, it is because their altruism and sense of humor can find a more admirable expression elsewhere. And until our laws governing expert testimony are so changed as to foster a frank, honest, dependable scientific opinion, those gentlemen competent to give it will be increasingly conspicuous by their absence from the courtroom.

Members of the bar would be surprised could they know how widespread and deepseated is the diffidence and aversion in the medical profession toward appearance in court to offer expert evidence. If the so-called "expert witness" has brought his evidence into such contempt as to draw forth the deprecating comment of a Supreme Justice of the United States, we may well pause to enquire at whose instance is this incompetent called into the presence of the learned court? Who is responsible for his appearance and his banalities in the halls of justice? At whose command does this pariah of science become the jester to enliven the jaded officers of a drowsy court, or incite the caustic philippics of a scoffing bar?

We must confess to a frank impatience with the ready criticism of those who should be most interested in the fairness and integrity of the expert witness, and most ready to establish practical conditions which shall effectually shelter the taking of expert evidence. If the officers of the court in the commonwealth of California are really sincere in their desire to regulate the taking, and elevate the quality, of expert testimony, then their opportunity to initiate these reforms, by co-operating with those learned professions called upon by them to give expert evidence, was never more golden.

We are firmly convinced that no bill can be enacted into a law governing expert evidence which does not include every profession and interest which may be called upon to offer expert opinion. The relations of this witness to the court must be so free from possible bias as to practically constitute him an officer of the court. If the selection of the expert shall be made by the court from a list of qualified men submitted by the various scientific bodies represented, the question of competency will have been fairly established. If the state shall define the compensation of the expert, he will insofar become immune from the charge of commercialism.

Should either the plaintiff or defendant desire to call experts additional to those selected by the court, that privilege should be provided for, but their status and compensation must be considered independently. No act should pass which shall not impartially protect to the fullest the just rights and interests of litigants.

Many of the states of the union have made repeated efforts to pass bills governing the appointment of the expert witness. Some of the states, like our own, have succeeded in getting more or less admirable bills through one of the houses of the legislature. Those in California who for more than five years have labored sedulously for these reforms have faith that in spite of an incredible apathy we shall in the end succeed.

Large gains have been made in arousing the various scientific professions to the conviction that expert evidence, to have a value in court, must be given under proper scientific conditions; that these conditions must be established and maintained by those qualified to interpret them; and that through concerted action, by which the interests of all shall be conserved, we may confidently co-operate with the bar in securing such legislation as shall make a *fait accompli* of this most needed reform.

THE CURE OF SYPHILIS.*

By HARRY E. ALDERSON, M. D., San Francisco.
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It is not the purpose of this paper to present a startling new remedy for syphilis, nor to report any spectacular results of treatment. Its object is rather to emphasize the fact that the treatment of the disease as carried on in a deplorably large percentage of the cases has been utterly inefficient.

It is most astonishing how widely diffused are false ideas concerning syphilis. As a member of the California State Board of Medical Examiners the writer has taken part in several hundred oral examinations the past year. The applicants were all individuals licensed prior to 1901 in some other state in the Union and every section of the country was represented. The absolute ignorance displayed by most of them and false ideas held by many others concerning syphilis was something most astonishing, particularly in view of the fact that there has been so much publicity given the subject in recent years in the lay press as well as in medical publications. Of course, it is true that most of the applicants were individuals who had either failed in their practice in their own states or had left on account of poor health,—and for these reasons, as well as others, had not kept abreast of the times. But we must remember that these licentiates, as well as the ever numerous illegal practitioners, do not hesitate to assume the responsibility of taking full charge of and guiding these patients through the course of their lues and advising them as to the future,—and to the average layman all "doctors" are alike.

The past few years have seen the development of valuable laboratory aids to diagnosis and also of a remarkable remedy and a successful plan of treatment whereby the salvarsan and mercury are given together. Notwithstanding this, it is becoming more and more apparent that there are

* Read before the Nevada State Medical Association, October, 1914.

large numbers of syphilitics who are temporarily clinically cured and who consider themselves really cured; but who are not well serologically (as determined by blood and spinal fluid examinations). One does not have to go over many cases in a large clinic before this fact becomes very evident. Probably it can be said that this sad state of affairs is largely the fault of the original medical adviser rather than the fault of the patient. However, it is only too well realized that patients frequently take the vital matter of deciding whether or not they are cured, into their own hands. Even in the latter event, the medical attendant is often to be blamed for not properly educating his patient. The prompt and spectacular clinical results of the salvarsan-mercury treatment (or occasionally only one injection of salvarsan) invariably impress the patient, and most unfortunately the unwarranted optimism of the medical attendant occasionally helps the patient in the belief that he is cured. Hasty ill-founded conclusions based on spurious Wassermann and Noguchi tests as applied by unreliable laboratories, or wrongly interpreted luetin reactions, account for a number of supposedly cured cases that show up with recrudescences.

If the blood that is taken for the laboratory test is not taken with extreme care to avoid contamination, and if the test tube likewise is not properly prepared, an erroneous result is inevitable. The blood ought not be taken within three or four hours after a hearty meal, because at that time it is full of material that might cause a spurious reaction. The same caution could apply to the use of alcoholic drinks as it has been found that false reactions may then be produced. Every precaution should be taken to keep even a very small amount of water from contaminating the specimen,—therefore all instruments, tubes or containers used should be absolutely dry. Likewise they should be absolutely free from acid or alkali.

Whenever possible it is best to send the serum instead of the whole blood, to the laboratory because blood cells decompose and possibly may liberate bodies that would influence the reaction.

When one considers these facts and realizes that there are many, many specimens collected under unfavorable conditions and sent to unreliable laboratories it is not surprising that there are in our midst many unfortunates who think that they have syphilis but have not the disease and never had it, and many syphilitics who have been declared cured when they were not. Added to these cases there is a large number of misguided individuals who have been in the willing hands and uncertain guidance of advertising quacks, dispensing druggists, Christian "scientists," chiropractors and other irregulars.

Included with this large number of unfortunates (for whom a sad future seems assured) there are many who, after a brief sojourn at some advertised springs where they drink freely of the water and bathe religiously and receive sufficient mercury treatment to temporarily dispose of noticeable symptoms, regard themselves as cured. It is from these victims that many late cases of lues arise,—most of our brain and nerve syphilis. One occasionally hears the statement that syphilis is "never really cured." It can be said that syphilis as treated in a large percentage of the cases (as indicated in the foregoing remarks) is not cured. The remedy for this state of affairs is in the proper education of the public as well as all those who assume the responsibility of taking charge of the sick.

In addition to the above, there are many patients who of their own accord and against the advice of their medical advisers discontinue treatment too soon. The large number of patients constantly seen with cutaneous or systemic manifestations of late lues, and the many cases of hereditary lues,—all present incontrovertible evidence of the fact that in the past as well as at present, lues in a large percentage of cases is not sufficiently treated.

We are now receiving the "crop" sowed by those who in the early salvarsan era gave one injection and assured their patients of a cure. The pill "crop" is a very large one,—as is also the sulphur springs "crop" and the "crop" of the early salvarsan era. Most of the patients presenting late lues give a history of having been temporarily relieved by one or all of these means.

This leads to the main question as to what is found to be the most effective plan of treatment. First of all it can be said without fear of successful contradiction that the salvarsan-mercury treatment is the most rapidly successful of any so far devised. Even in late syphilis it is advisable to use this combination, supplementing the same, of course, with the iodide. In every case, a Wassermann test of the blood should be made before beginning the treatment and later, to check up the same.

First in efficiency, convenience and in every way most desirable, come the injection methods. If the patient can call every day or so, probably the soluble preparations are the most desirable, but for obvious reasons, one cannot often count on having patients call regularly enough for this plan of treatment. Where it can be accomplished, prompt and satisfactory results are obtained. Intravenous injections are the best but the intramuscular are almost as good. Deep intragluteal injections of the soluble salts rapidly find their way into the blood stream on account of the great vascularity of the muscle. Arsenic given in this way in combination with the mercury often proves to be of great value. In most cases we have to resort to the weekly injection of the so-called insoluble salts. We have found the salicylate of mercury and the gray oil to be the most desirable in every way,—and prefer the former. It is considered to be slightly soluble. We prepare a 10% emulsion of the salicylate of mercury in albolene and inject deeply intramuscularly one to one and one-half cc. every seven or eight days for ten successive treatments. It is found to be less painful than the gray oil, although twice as many doses of the former have to be administered. We do not resort to calomel or the various other insoluble preparations that are recommended by different syphilol-

ogists. It is hardly necessary to state that our patients are frequently examined during the treatment and if organic disease (not luetic) is found, or particularly if the kidneys show impaired function, the mercury is discontinued. Naturally in the cachectic, the aged, the arteriosclerotic and the tuberculous if one gives the mercury it is given with extreme care. This applies also in a less degree to the pregnant. In all cases the urine should be examined frequently and the gums and teeth should be watched closely.

Next in efficiency to the injections comes the inunction method, and next, the internal administration of the drug in solution,—and lastly should be mentioned the drug in pill form. Experience has shown that the treatment by pills (particularly the protiodide pills so much in vogue a few years ago) is inefficacious in many cases although under proper conditions good results have been observed. The pills often are not properly made, or too old, or for some other reason they may pass through the alimentary tract unabsorbed. With the internal administration of mercury in any form, one is never certain that all of the drug is absorbed. Active lesions and the presence of a positive Wassermann that is often observed under this plan of treatment give the best proof of its inefficiency. In most cases, it is still considered very desirable to give iron and arsenic or perhaps strychnia during the course. It cannot be stated too often that repeated Wassermann tests of the blood and spinal fluid are very necessary to check up the treatment and later to decide the question of a cure. It has become well established that cerebro-spinal involvement may occur very early in lues as shown by early spinal fluid positive Wassermanns. For this reason and also on account of the rapidity with which syphilis invades all of the tissues and organs the treatment of early syphilis should be as intensive as it can be made.

If possible the chancre should be extirpated, but if this cannot be accomplished, the next best thing would be to apply to the lesion a calomel ointment, 50%. This measure removes or destroys immense numbers of the spirochaetae in situ. Of course the organisms are also scattered through the system, but no one will dispute the desirability of quickly destroying such a large focus of the disease. As soon as possible, of course, salvarsan should be given intravenously (in as large dosage as conditions will permit). In every case a thorough examination should be made to determine whether or not there are any contraindications for salvarsan or mercury therapy. The following are recognized contraindications: Organic kidney disease (provided it is not luetic), cardiovascular degenerative conditions, organic disease (non-luetic) of any of the viscera, middle ear or eye disease (non-luetic), pronounced asthenia or cachexia. In case any of these states are luetic, the drug could be given cautiously. The patient should be carefully watched during the course of the treatment for evidences of untoward effects of the drugs. If this is done, one is pretty sure to avoid unpleasant complications occasionally met with. Most of the reported fatalities from salvarsan can be attributed to faulty technic and to failure to make proper selection of the cases.

For awhile, neosalvarsan, on account of the ease with which it could be prepared and administered, gave promise of supplanting salvarsan. It soon became apparent, however, that its action was not as powerful as that of salvarsan, larger doses and a greater number of injections being necessary to obtain the desired results. So the majority of syphilologists have returned to the intravenous administration of salvarsan in properly selected cases. This is used exclusively along with the mercury in Dr. Wilbur's service. Mercury must still be relied upon and it can be considered to be almost as valuable as salvarsan. The two drugs used alternately give better results than either one alone, so this plan of treatment has been adopted generally.

What might be considered an ideal course of treatment of early lues at the present time would be as follows: At the time of, or after the destruction of the main focus of the disease (as already suggested) a full dose of salvarsan should be given intravenously and this should be repeated every ten days until five or six doses have been administered. During this course, salicylate of mercury or gray oil should be given intramuscularly every seven or eight days until ten of the former or five of the latter are given. Then the blood and spinal fluid Wassermann could be tried. If either gives a positive result, or if any clinical signs remain, it should be considered as an indication for more vigorous salvarsan-mercury treatment. If both are negative and there are no other signs of the disease it would be advisable to omit all specific treatment for a month or six weeks, after which the blood and spinal fluid could be tested again. If the infection is very severe and symptoms persist, in the interval some soluble salt could be injected. During the interval a ferruginous tonic could be given. The results of these tests or the presence or absence of clinical symptoms should determine whether or not to give another course of treatment. If all signs are negative then it would be advisable to wait another month and test the blood and spinal fluid. After this period, a course of intramuscular injections of mercury should be given, whether the reaction is negative or positive. If clinical or serological symptoms should appear at any time, it would be well to give another series of salvarsan and mercury injections. It may take two or more such courses of the combined treatment to render a positive Wassermann negative. Should symptoms still be present after the first year, it is considered advisable to give potassium iodide, just as it has been given successfully for many years.

It should be borne in mind always that cerebro-spinal complications may occur even in early lues the first evidence of the same being observed in the spinal fluid. The treatment of this phase will be touched upon presently.

It has been proven that lues can be aborted by early intensive treatment; but it has not yet been demonstrated that such a fortunate result is

obtained in many of the cases. Complete disappearance of all symptoms (clinical and serological) is commonly observed after two thorough courses of treatment as just outlined; but it is too early to be able to say that such cases can be declared cured. In the light of our present knowledge and experience it seems best to give a course or two of the mercury treatment yearly for the two years following the first period of salvarsan-mercury therapy and to make repeated Wassermann tests. After such a course, if the complement fixation test remains negative, a "provocative" injection of salvarsan followed by a blood test could be made. If after all this the blood and spinal fluid show negative results, in all probability the patient could be declared cured of his disease. Many authorities now consider that after efficient intensive treatment, a period of at least one year showing negative blood and spinal fluid Wassermann should elapse before the patient should be given permission to marry. Certainly it would seem that this is the safest plan to follow.

Early lues responds most favorably to intensive treatment and when the method is carried out thoroughly, a very good prognosis can be given. With late lues it is different; the problem is more difficult because some of the organisms have become localized in some remote part of the body most difficult to reach through the blood stream. If there are no contraindications (particularly impaired kidneys) intensive treatment at this stage may give good results. However, it is much more difficult to change the serum reactions in this phase of the disease. Of course, the iodides must be given here with the salvarsan and the mercury. In the late cases one is very likely to see cerebro-spinal involvement. For the special treatment of the cerebro-spinal involvement, the intraspinous injections of salvarsanized serum (Swift-Ellis) have been recommended,—but it is a more or less dangerous and uncertain procedure even in the hands of the experienced. *Very serious results have followed attempts at carrying out the method in various parts of the country.* Intensive treatment of salvarsan intravenously and mercury intramuscularly are much preferred by some authorities who have observed good results from the same.

In concluding, it would be well to briefly review the main facts that the writer desired to emphasize:

1. The treatment of syphilis in the past has been inefficient in a deplorably large percentage of the cases thus accounting for the large number of cases of brain lues and other late complications that one sees.

2. There are many syphilitics who are temporarily "cured" and who consider themselves cured, but are not well (as determined by blood and spinal fluid examinations).

3. Owing to spurious blood tests there exist many unfortunates who have been convinced that they have syphilis and never had the disease, and many luetics who have been declared cured but are not cured. A negative Wassermann may be obtained in syphilis at times, with a triple plus reaction later.

4. This state of affairs is due to the ignorance of the public and to the fact that there are in our country immense numbers of uneducated and unprincipled individuals who pretend to make diagnoses and then assume full charge of the treatment.

5. Poor medical practice laws or the failure to properly enforce the law, can be said to be responsible for this state of affairs in some cases,—but the main blame must rest with the public for permitting bad laws to pass and for allowing charlatans to prey upon them.

6. The final remedy lies in the proper education of the public.

The following is a copy of a circular that is given to every one of the luetics in the writer's clinic. It is based partly upon printed instructions issued for the same purpose in the skin clinics at the Charite Hospital (Berlin), the Allgemeines Krankenhaus (Vienna), and the St. Louis Hospital (Paris). It has proven to be of valuable assistance in obtaining intelligent co-operation on the part of the patients and perseverance in the treatment of these cases:

INFORMATION REGARDING SYPHILIS.

Syphilis is a very contagious disease. It is quite prevalent. It remains contagious for years. It is due to a microbe, the nature of which is now definitely known. The disease is usually quite curable. It is also preventable.

The manifestations of syphilitic infection usually appear in from two to six weeks after exposure to the disease, in the formation of a sore at the site of inoculation.

The further manifestations consist of skin eruptions of various types which recur frequently in the course of the next few months or years (eruptions of the skin, sexual organs, the buttocks, the palms of the hands and soles of the feet, the lips, tongue, tonsils, etc.). The disease may also affect any organ or tissue of the body.

Often early symptoms trouble one very little and therefore may be overlooked, or mistaken for something else by the patient. In such cases severe symptoms may appear months or years later. Proper treatment will prevent the appearance of these symptoms.

Persons suffering with syphilis should boil all articles used by them which may carry the disease, in order to protect the innocent.

The disease aside from sexual contact, is communicated in many ways, among which may be mentioned kissing, using (after a syphilitic person has done so) any of the following: Glasses or cups, saucers, spoons, knives, forks, cigars, cigarettes, pipes, soap, combs, brushes or wearing apparel, as well as by direct contact with a person having syphilis or sleeping in beds used by syphilitics. The infection enters the system through some cut or abrasion in the skin or mucous membranc. This cut or abrasion may be so very slight as to be almost invisible.

Syphilis is ordinarily quite curable; but it cannot be cured by a single treatment. One injection of salvarsan (606) is not enough. Repeated treatments are necessary under proper medical supervision. Treatment must not be given up until the attending physician advises that it is safe to do so.

The dangers of the disease include insanity, blindness, paralysis, loss of the nose and palate, decay of bones, and other disfiguring or destructive results.

Only when a patient has taken thorough treat-

ment at the hands of a competent physician is he protected from the later severe manifestations of the disease.

Persons having syphilis should carefully observe the following rules: Look carefully after the condition of your mouth. Brush your teeth thoroughly three times per day and use the prescribed mouth wash frequently. In cleansing the mouth, pay especial attention to the gums and folds behind the teeth. If you have any sores on the gums, inside the cheeks, or on the tongue or swollen gums, notify your doctor promptly. When you consult a dentist, be sure and tell him that you have syphilis (for the protection of others).

During the course of your disease and while you are taking treatment, you must lead a regular and rational life, avoiding all excesses. Avoid all strongly spiced foods and be very moderate in the use of wine, beer or other liquors, and tobacco. It is best to avoid them entirely, for they add to the dangers of the disease.

You should at all times avoid all possibility of communicating the disease to others.

You should not marry sooner than four years from the time of your infection. Marriage at an earlier date is dangerous to both wife and child. Instructions as to when you shall cease treatment and when you may marry, must always be given by the doctor.

Make it a rule to report to the doctor immediately any unusual symptoms.

Keep this paper and show it to your doctor and always ask his advice regarding your sickness.

In the future whenever you have occasion to consult a doctor for any purpose, be sure and tell him that you have had syphilis. It is of the greatest importance for him to know this.

PROGRESS IN OBSTETRICS.

By ARTHUR H. MORSE, M. D., San Francisco.
(From the Woman's Clinic of the University Hospital.)

During the past year progress in obstetrics, at least as far as the more practical aspects of the subject are concerned, has been marked not by the introduction of new methods but by the settlement of disputed therapeutic questions. Naturally, in the presence of many complications the procedure of choice remains the subject of honest difference of opinion. Good authority is not unanimous, for example, regarding the proper treatment of placenta previa; and, also, equally competent men oppose each other in the discussion of the treatment of albuminuria during pregnancy. On the other hand, the uniform experience of large clinics in the investigation of a number of practical problems enables us to adopt with confidence measures that heretofore were really in the experimental stage. No better example of this can be cited than the use of the extract of pituitary gland at the time of labor.

PITUITARY EXTRACT.

In 1909 the physiological action of pituitary extract upon the uterine muscle was demonstrated independently by Kehrer and by Dale. Subsequently, it was shown that the substance which stimulates the uterus to contract is derived from the intermediate and posterior portions of the gland. While the anterior portion of the gland hypertrophies during pregnancy and, therefore, must play a role in metabolism during that period, it has no effect upon the uterine muscle fibers. Accordingly, the various commercial preparations—vaporole, infundin, pituglandol, and pituitrin—which are used to increase the frequency and vigor of contractions at the time of labor are made from the posterior lobe.

As an abortifacient pituitary extract, alone, is powerless; but, occasionally, it has been found useful to supplement the effect of a bougie or a bag.

During labor at full term the extract should not be administered until the cervix is fully dilated, and not even then in the presence of a faulty presentation or pelvic contraction. Unfortunate results have been reported where this precaution was disregarded. In several cases where the treatment was used during the first stage of labor the cervix became unusually rigid and incisions were required to effect delivery. A selective action of the extract upon the cervical muscle has been observed also in cases of breech presentation, and as a result great difficulty was experienced in extracting the head. The most striking illustration of this action upon the cervix is afforded by the report of a case of twin pregnancy in which pituitary extract was administered after the birth of the first child; and, in order to effect delivery of the second, it was necessary to dilate the cervix manually.

Pituitary extract is most useful in the treatment of uterine inertia in the second stage of labor. It produces rhythmical, intermittent contractions and often obviates the necessity for the use of forceps. A "contraction storm" coincident with the birth of the head has been noted and this phenomenon must be controlled by inhalation of chloroform, otherwise deep perineal lacerations are frequently a result.

The effect of pituitary extract differs from that of ergot in that the former does not cause tetanic contractions during the second stage of labor and does not interfere with the separation and expulsion of the placenta. A few authors express the view that the administration of pituitary extract may be followed by atony of the uterus. However, this has not been the experience of the Dresden Clinic, where in the third stage of labor a decrease in the amount of bleeding was noted. Similarly, in cases where the extract was used Madill and Allan found that the placenta separated promptly and was expelled spontaneously. It has also proved valuable in the control of postpartum hemorrhage; but it is less reliable than ergot in the treatment of subinvolution.

The kidneys are not affected by pituitary extract, consequently it may be used in cases of albuminuria and of eclampsia. It offers a most reliable means of preventing undue loss of blood when Caesarean section is performed and should be administered about the time when the patient goes under the influence of the anesthetic. Contraindications to the use of pituitary extract as pointed out by Heany are in arteriosclerosis, uncompensated valvular heart lesions, and myocarditis. Since it causes a rise of blood pressure and a slowing of the pulse its use in the presence of these conditions may be attended with great danger.

MANAGEMENT OF THE THIRD STAGE OF LABOR.

A less active management of the third stage of

labor is being widely advocated, and the favorable results of the "waiting method," longer recognized by Ahlfeld as physiological, have been confirmed by the statistics of several large clinics.

The hurried conduct of the third stage is not due altogether to the desire of the obstetrician to bring his duties to a conclusion; it is due in part to the fear of hemorrhage and to the fear of retarded separation or retention of the placenta. Oddly enough, it has been shown that the energetic measures adopted to avoid these complications frequently defeat their own purpose. And, as Jung has shown, active treatment in the third stage is justifiable in only two conditions, namely, placenta previa and premature separation of the placenta. Except in such cases serious hemorrhage, probably, is never prevented by massaging the uterus after the child is delivered.

The uterus should always be carefully observed by palpation through the abdominal wall, and in the event of profuse hemorrhage it may be kneaded; but in the average case no more energetic measures than lightly touching the abdomen, in order to determine the level of the fundus and the degree of contraction, should be practiced. As Ahlfeld points out, continuous inspection of the vulva is sufficient protection against severe or sudden loss of blood, and continuous palpation is no guarantee whatever against this complication. On the other hand, Jung concludes that profuse hemorrhage actually results from too energetic measures adopted to avoid atony.

Occasionally, the retention of the placenta and, more frequently of the membranes, is due to overzealous massage of the uterus during the third stage of labor. The frequency of the latter complication is indicated in the comprehensive statistics of Guildal, who reports a series of 14,078 cases. In 346 instances a portion of the membranes was left in the uterus after the placenta had been expelled. "While this accident," he says, "is favored by anomalies of the placenta, as placenta marginata, it is more frequently due to faulty conduct of the third stage—and particularly to the too early employment of the Credé manoeuvre."

The correct management of the third stage of labor and, as Ahlfeld, Jung, and Guildal agree, a management which will most frequently result in avoiding hemorrhage and retained membranes, is as follows: Following the delivery of the child the uterus is watched but the amount of bleeding from the vagina is even more carefully observed. If the uterus retracts well and contractions occur satisfactorily and if the bleeding from the vagina is moderate, the physician should wait until the fundus reaches the umbilicus—a position which indicates that the placenta has separated and lies in the lower uterine segment or vagina. Then, by moderate pressure upon the fundus the placenta may be expelled.

In the presence of hemorrhage or if the placenta fails to separate in three-quarters of an hour, the Credé manoeuvre may be tried. Whenever this proves unsuccessful the patient should be anesthetized and the Credé manoeuvre tried again, for often the rigidity of the abdominal walls is sufficient to nullify attempts to separate and expel the placenta from the uterus.

As a last resort and after the expiration of an hour,—though Ahlfeld insists that two hours should elapse—the placenta should be removed manually. This procedure carries with it the greatest danger of uterine infection, and, in consequence, no pains should be spared to render the external genitalia as clean as possible. Fresh, sterile dressings should be placed about the field of operation and the operator should always wear freshly sterilized rubber gloves.

In cases where the placenta is expelled without recourse to internal manipulations but the membranes adhere to the uterine wall, an attempt to dislodge them should be made by rotating the placenta so as to "rope" the membranes. Thus twisted into a cord, they may be grasped by an artery clamp and gradually withdrawn.

In cases in which a portion of the membranes are retained, Guildal and also Goodall have clearly shown that to leave them alone is the wiser policy. Only serious bleeding warrants active attempts to remove them; for it has been clearly demonstrated that considerable risk of infection attends this procedure.

SCOPOLAMIN-NARCOPHIN ANESTHESIA.

The conservative position of the American medical profession with regard to the use of scopolamin and morphine during labor would seem to be justified by the fact that the Freiburg Clinic continues to modify the technic of administration of these drugs. As late as May 1914 Siegel, reporting a series of cases from the service of Professor Kronig, admits that their results are not yet entirely satisfactory though he regards the method as greatly improved. On account of the effect upon the child, the morphine has been given up and as a substitute narcophin is used. Furthermore, a more stable preparation of scopolamin has been obtained and its use is said not to be followed by toxic symptoms on the part of the mother.

Siegel describes the technic of this method of anesthesia, indicates a suitable schedule for the administration of the drugs, and analyzes the results in 220 cases in which scopolamin and narcophin were used. An average of six administrations per patient was required in this series which corresponds to .06 grams of narcophin and .0015 grams scopolamin. The greatest number of doses given any patient was twenty-seven (.0048 grams narcophin and .165 gram scopolamin).

Complete amnesia was attained in 193 cases (88%). Twenty-three patients could remember something of their experience during labor and five were entirely uninfluenced by the drugs. The author explains these last results by the fact that the treatment in these cases was begun only shortly before delivery took place. Amnesia generally requires that from three-quarters to an hour and a half elapse between the initial dose of the drugs and the birth of the child. This treatment, therefore, is useless in cases of precipitate labor.

Notable retardation of the uterine contractions was noted in three instances and slight retardation in twenty-eight instances. In thirty-two cases

pituitrin was used and occasionally three doses were required. Such results indicate that labor may be prolonged by the use of scopolamin and narcophin, and this question is considered in some detail by Siegel. As a basis of comparison he selects primiparous women who were not given the treatment and finds that in similar cases in which the treatment was used the first stage was prolonged an hour and twenty-two minutes, the second stage thirty-three minutes. The frequency of operations in this series of 220 cases was 10%, which is about the same operative frequency when "twilight sleep" is not induced.

Other effects of the treatment upon the mother include a peripheral hyperemia, especially of the face. Marked excitement occurred in six cases and this symptom would seem the more likely to occur when labor is prolonged and consequently a great number of doses of the drug required. No respiratory embarrassment in the mother occurred in any instance. Similarly the use of this treatment does not predispose patients to postpartum hemorrhage nor does it interfere with lactation. Indeed, a more rapid and satisfactory convalescence from childbirth, it is claimed, follows the use of "twilight sleep."

The infants, in this series of cases, were of normal development. In 148 instances the fetus was uninfluenced by the drugs. A light apnea was noted in 61 instances, severe apnea in 6, and deep asphyxia in 4. Two infants were dead born and one living child, because the mother had high fever, was the subject of a destructive operation. Furthermore, two of the deeply asphyxiated infants could not be resuscitated. The author computes a fetal mortality of 2.15% referable to the use of "twilight sleep."

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THE RELATION OF THE PERIOSTEUM TO BONE VITALITY.*

By R. T. STRATTON, M. D., Oakland.

Notwithstanding the mass of clinical experience tending to establish the function of the periosteum in its relation not only to bone production but also to the maintenance of the vitality of the bone, there is still much misunderstanding or variance of opinion on both of these points. Whether it has positive and active osteogenic properties, as has long been held and is still strongly maintained, or whether it has no higher function than to serve as a supporting and limiting membrane, will not now be considered. It is the purpose of this paper, rather, to discuss how much the periosteum has to do with sustaining the life of bone. The decisive bearing of this upon prognosis and treatment of osseous lesions is evident.

There is a unanimity of opinion that under aseptic conditions, the overlying soft structures being *in situ,* the presence of the periosteum is *not* essential to the continued vitality of the bone. This we see frequently enough in the open treatment of fractures where the periosteum may be widely detached or missing and yet the reparative process will go on practically unhindered.

Investigators have removed the periosteum experimentally from large areas over the entire circumference of the diaphyses of long bones without compromising their vitality. Some delay in union, only, is met with when a bone so treated is fractured within the denuded area. That the membrane is one factor in supporting the life of the bone, but not an essential one under these conditions, is proven and conceded.

When, however, more or less permanent exposure of bone devoid of its investing membrane exists, or the factor of infection down to the actual surface of the bone is present, the understanding as to the ability of the bone to maintain its vitality, unaided by the presence of the periosteum, does not seem to be so clear. The uncertainty on this point, considering its importance, would seem to call for as positive a pronouncement as the state of understanding will permit.

The writer well recalls his own early troubles in gaining a clear conception of this question. Such a statement as the following—a quotation from a standard work of the day, under the heading of bone inflammation—indicated, perhaps, the surgical trend: "If inflammation is acute, the circulation is stopped, the tissues perish and gangrene (necrosis) occurs. In compact bone this is the rule. Acute inflammation, if it is not followed by immediate resolution, ends in necrosis. If the periosteal surface is involved (acute periostitis), the sequestrum as it is called, is superficial."

Ashurst, under the heading, Periostitis, wrote less discouragingly: "There may be a rapid formation of pus, when necrosis of the subjacent bone is apt to follow."

* Read before the Alameda County Medical Association, March, 1914.

Some years later Parke writes: "If pus forms and the periosteum is separated from the bone, there is a probability of acute necrosis of the shaft."

One could imply from these, if he possessed a surgical optimism, that sometimes the opposite happened and the bone, to some extent at least, might not perish.

With the possible writing of this paper in mind and to determine if his personal difficulties along this line have been shared by others, inquiry has been recently made of a number of medical men. Some were not long from the medical schools, others were graduates of former days and men of considerable experience in general surgery. The question has been asked, What is the prognosis as to the life of the bone in the presence of a suppurative process involving the periosteum and laying bare the bone? The replies have, with a single exception, been that it necessarily meant the death of the bone, either superficially or to a greater extent. One man, skilled and experienced enough to do a successful intestinal anastamosis, replying to the writer's question as to the prognosis in a neglected felon case in which a probe passed through a sinus disclosed denuded bone, said that it meant death of the phalanx and amputation. If he had chosen to do so, could he not have quoted Von Bergmann who, writing of "osseous panaritium," states: "If the diagnosis is still uncertain (after the perforation of pus), the probe will demonstrate a sequestrum of the larger part or the whole of the phalanx"?

One physician—the exception above noted—replied that the *extent* of the separation or loss of the periosteum would determine whether any necrosis would result. Somehow the emphasis seems to have been so long and forcibly laid on the fact that bone death is so much to be feared and expected under these conditions that apparently the possibility of that end not resulting is too largely overlooked. The hopeful side of the proposition is not the emphasized side, and our prognoses are, I fear, at times unnecessarily gloomy and our treatment perhaps on occasion too radical.

MacEwen must have had the impression that a wrong understanding of this question existed in some quarters, at least, when he recently wrote: "Bone bereft of its periosteum does not therefore die, and the mere detection of bare bone by a probe is no reason for believing that such bone is either dead or must die. If otherwise healthy, such a bone is capable, not only of living, but of performing its function and proliferating if need be."

This authority, you will note, hinges the possibility of the life of the bone being sustained in the absence of periosteum, upon the existence or absence of coincident bone disease. It is not altogether clear that he had infectious processes in mind. The question at once suggests itself, Can the bone itself be normal under these conditions? Can the pathology advance only to the bone surface and be limited to that plane, and not coincidentally to some extent penetrate the osseous tissue?

The life of the bone is maintained and dependent upon two sources of blood supply: First, *principally* from the nutrient arteries; and, second, from the arterial blood supply of the periosteum. The latter, at frequent intervals, sends off its arterioles to the subjacent bone. These enter the haversian canals and subdivide, nourishing especially the peripheral lamellae of the bone, anastamosing with the blood channels from the nutrient arteries.

The fact is well established by clinical evidence that when the inflammatory process accompanying an infection advances only to the periosteum, that the vitality of the membrane can well be maintained. In a very positive sense, then, the periosteum protects the subjacent bone when its integrity is jeopardized by advancing infection.

There can be no doubt, either, that the free intercourse of blood in the superficial parts of the bone from the two independent systems accounts also for the ability of the bone to maintain its nutritional integrity when under aseptic conditions it is deprived of its periosteum.

Whether in the presence of a *suppurative process* which has either destroyed or separated the periosteum from the bone, it is possible for the superficial parts of the bone at least, to continue to live, will depend on the extent of the thrombosis in the arterioles coursing from the periosteum to the bone beneath. The deeper layers of the periosteum are areolar in character, and through this more loosely constructed tissue the arterioles advance toward the bone, and it is not difficult to imagine that in the presence of a relatively mild infection the process of thrombosis progressing ahead of the inflammatory zone as the infection invades the deeper layers of the periosteum, might advance only to the bone surface and there be stayed. If this is the limitation of the process of thrombosis, the circulation in the haversian canals of the superficial bony lamellae, ordinarily supplied by the periosteal vessels, can still be maintained by the endosteal vessels. Thus, on *a priori* grounds, the maintenance of the life of the bone when deprived of its periosteum, would seem possible not only under aseptic conditions, but in the presence even of infection as well.

But, after all, the final verdict must rest, not with theory, but with experience. Let me present concisely two clinical cases which enforce the point that apparently needs general emphasis at this time —that bone deprived of its periosteum and even in the presence of infective suppurative process may still be capable, in some cases, of maintaining its vitality.

A good many years ago I was doing a sequestrotomy in the femoral shaft of a Portuguese lad of about fifteen years of age. After the involucrum had been chiseled away sufficiently to permit the removal of the sequestra and all diseased parts of the bone had been cut out, there remained less than half of the transverse diameter of the femur. Extending entirely across the portion of the shaft remaining there was a strip of bone three-fourths of an inch or more wide devoid of periosteum. The exposed surface of the femur was smooth, and where it was open to inspection had something of a pearly hue, entirely different from the

pink, healthy appearance of bone from which the periosteum has been recently separated. To have removed this exposed portion of bone, besides being very difficult on account of its deep and unapproachable location, would have jeopardized the integrity of the shaft and have made it likely that fracture of the femur would be a superadded complication. It was therefore decided to adopt a conservative course. According to the mode of the time, the bone cavity was packed with iodoform gauze, the soft parts allowed to fall into place. The wound pursued the usual course in such conditions, and the bone cavity rapidly filled in and the entire wound promptly cicatrized over. No fistula remained as I feared would result. The deep location of the bone did not facilitate examination of the portion devoid of periosteum, but there was nothing in the process of healing or after history to suggest the occurrence of even superficial necrosis where the femoral shaft had been deprived, by infection, of its protecting membrane.

A recent experience again illustrates this same truth. A middle-aged man presented himself at my office with a paronychia of the left middle finger. The infection had resulted from a laceration at the finger tip some ten days previous, and when he came to me a well-developed phlegmon existed on the left side of the nail near the base. This was promptly incised. Examination showed no exposed bone. A few days later swelling on the opposite side of the nail developed, and this was likewise incised. Through this latter incision the probe could be readily passed to the anterior surface of the base of the terminal phalanx, and when moved transversely to the long axis of the finger showed that the periosteum was either destroyed or separated across the entire width of this part of the bone—close to half an inch. The vertical extent of the denuded bone was not determined. Free drainage was maintained and in a few days, as soon as the amount of suppuration was somewhat diminished, Beck's bismuth-vaseline paste was injected. Pus production immediately practically ceased. On the following day, only, another quantity of the paste was forced in. The sinus promptly healed, and the finger has since remained sound.

Not the fact that infection has reached the surface of the bone; not the fact that a greater or a lesser extent of bone has been deprived of its periosteum in the presence of infection, but rather this: the extent to which the process of arterial and capillary thrombosis has advanced, whether to or within the osseous structure, determines whether the bone vitality may be maintained or necrosis will result. Early incision, free drainage, may be deciding factors in the outcome. And when bare bone is detected, at least for a while, until the *tactus eruditus* determines that necrosis has actually occurred, a Wilsonian attitude of "watchful waiting" is justified and something of hope may rightfully lighten our prognosis.

Furthermore, when ostitis and bone death result from periosteal infection, and is unassociated with the obstruction of more or less of the major circulation of the bone from the nutrient vessels, such as occurs in osteomyelitis, it will rarely happen that anything more than a superficial necrosis —one involving the outer lamellae only—will result.

THE UTILITY OF CATARRHAL VACCINES.*

By FRANCIS WILLIAMS, M. D., San Francisco.

My attention was drawn to catarrhal vaccine a year ago, while seeking to cure my little daughter of a persistent recurring rhinitis, similar in nature to an affection which a year prior existed in her brother, terminating as an acute infective cellulitis of the cervical and mediastinal regions, the adenoid tissue acting as port of entry, so causing the first infection of his life at 2 years of age to end fatally. With this in mind, I gave one-half ampoule of Sherman's No. 7, containing:

Micrococcus catarrhalis	50 mill.
Pneumococci	20 mill.
Streptococci	15 mill.

An increased and watery secretion from nares followed for 12-24 hours, then cessation for one week. A slight recurrence required a second injection, with similar increase ensuing followed by freedom from all catarrhal affections from April to February, when she passed through a brief attack of grippe, and in March, incipient pertussis, both of which seemed to yield quickly to vaccines.

From last December to the present date there have occurred many cases of intractable recurrent "colds," tonsillitis, pharyngitis, and rhinitis. During this period I have used catarrhal vaccine in 32 cases, giving about 70 injections. The cases were divided as follows:

Recurrent "colds" and rhinitis	8
Tonsillitis and pharyngitis	9
Bronchopneumonia (1 post pertussal)	2
Pertussis	6
Spasmodic cough with catarrhal conditions	5
Chronic laryngitis	1
Prophylactic	1

Results:

Improvement marked with 1st or 2d injection	22
Moderate—ran a course but moderated	8
None (Pertussis in adult)	1
No data (Chronic laryngitis)	1

Typical Cases:

Quinsy. Mrs. W., aet. 22, severe quinsy with membrane one month prior. Swab negative, but given 2000 units diphtheria antitoxin with prompt recovery. Second attack December 3. Feared antitoxic serum because of anaphylaxis. Resisted all usual treatment and began to invade peritonsillar tissue, with rise of temperature. Gave 100 mill. Micr. catarrh., etc., at 11 a. m. At 6 p. m. patient was distinctly improved and recovery was very rapid during following two days. This, of course, represents extreme of favorable result.

Mr. McN., aet. 38, represents a more discouraging type. Ill several days when first seen, with

* Read before the San Francisco County Medical Society, May 5, 1914.

general peritonsillar infiltration and closure of fauces. Injections 100 mill. Micr. catarrh., etc., on two successive days, with some local improvement and subsidence of temperature from 103° to 100°. Omitted injection third day. Fourth day full recurrence of conditions, renewed swelling and fever. Injections fourth and fifth days, with a complete subsidence occurring. This patient did not sleep or take nourishment to any degree the first week and was a severe test. Though no case is a proof, this one surely varied favorably with his vaccine therapy. No pus was discovered by lancing or rupture.

Recurrent Colds. Donald and Russell W., aet. 2 and 4 yrs. Recurrent colds several months, though very vigorous children in good surroundings. Russell received injections December 3d and 8th; much improved until January 17th, when a spasmodic cough called for mixed pertussis and Micr. catarrh. vaccine, yielding to one injection. Donald received an injection December 5th; improved markedly until January 16th, when a spasmodic cough yielded to one injection of mixed pertussis and Micr. catarrh. vaccine. April 9th a slight tonsillitis yielded to an injection of catarrhalis mixed.

Pertussis. While I find the pertussis vaccine very helpful, this paper's scope only permits me to say that I found the addition of the catarrhalis mixed a useful adjunct in controlling catarrhal symptoms.

In using the catarrhal vaccine upon myself for a severe resistant pharyngitis and rhinitis, I injected 50 mill. intravenously. Within ten minutes the throat and nose symptoms disappeared, to be as quickly supplanted by a generalized attack of muscular rheumatism which in four hours localized in the neck muscles. Although a therapeutic failure, it suggested an etiologic relationship between throat infections and the muscular type of rheumatism. In this instance Phylacogen an agent frequently effective in aborting acute articular rheumatism failed to modify the muscular form, when tried 24 hrs. later.

In conclusion, it is proper to answer certain questions.

How long should we continue the injections to cure and secure immunity?

To cure or relieve the attack, one to three injections one to three days apart usually suffice. I spaced my doses to maintain improvement, symptoms of relapse calling for another injection. To secure immunity, it is probable that we should continue injections rather beyond the period necessary to abort the attack, as I have observed a tendency to relapse in some cases.

What dosage is necessary?

A reliable answer must be based on larger experience. I can only say that in the first four years of life I used 20 to 40 millions of the Micr. catarrh. and gave adults up to 100 millions, in only one case (myself) using 200 millions, with less satisfactory result.

How does this treatment by injections affect the physician's relations with young children?

It would appear to have little effect. The child is turned over the mother's or nurse's knee, the injection given in the gluteal fold is but slightly painful, soon forgotten, and scarcely associated with the physician, especially if treated as an accidental pin prick calling for a little sympathy and rubbing.

At what age is the vaccine most effective?

Young cells possess the greater margin of reactive power, and upon this the efficiency of vaccines depends; so it follows that the first two or three decades of life give the best results. Older persons react more gradually and usually not so favorably.

The number of cases here reported is too small and too recent to base conclusions. And certainly nothing can warrant neglect of necessary surgery for the upper respiratory tract. But often we must deal with pathology here by medical means, temporizing until acute inflammation subsides or until financial convenience permits proper surgical interference.

This brief experience gives me the impression that vaccine therapy is probably to be our best single agent, exclusive of proper surgery, in handling infections of the upper respiratory tract, and would indeed seem a good preliminary to surgical correction in cases of recurrent "colds." Finally, I wish to make a plea for the importance of checking rhinitis in children, as it seems to weaken the mucosa and permit in certain instances the penetration of the lymphoid tissues by virulent and rapidly spreading infections, which, in their rapid fatality, are more serious even than the acute and chronic forms of adenitis so familiar and frequent in the cervical region.

Discussion.

Dr. K. Pischel: I only wish to express my admiration of the courage of Dr. Williams in experimenting upon himself. I wish some others had done that. I remember, some time ago, a patient of mine who, during my absence, was injected with Schaefer's serum, and died promptly seven hours later with a temperature of 108°; I am sorry that doctor did not try it on himself first.

Dr. Cullen F. Welty: We have listened to a very instructive talk from Dr. Williams, and I must say that I am pleased to hear what he has to say. In my own practice, I find it difficult to produce satisfactory results. The acute coryzas, whether in young or old, are sometimes benefited by my treatment and sometimes not. I do not hold out anything to my patients, and in fact, I rather discourage them to make further visits, because I have such little confidence in my own ability to do anything for them.

However, this infection has a wider significance, and if we only stop to think and reason for a time we will see why it is that children are so susceptible to these inflammations. It is because the nose is congested, and it is congested largely because of adenoids and tonsils. The adenoids, especially, are most sensitive to changes, and will take on the slightest infection at any time. In going about the slums of the city you notice the children with dirty noses. All those children are chuck full of lymphoid tissue, and when this tissue is removed, they get well. That is universally so.

The Doctor speaks of immunity following repeated injections of the vaccines, which I have not seen. It may be so, but nevertheless, that immunity is going to wear off sooner or later, because the pathology: the background of the whole proposition, still remains. You take a grown-up person who is subject to cold, to rhinitis, and you will always find in that individual a pathological lesion in the nose or throat which you can trace as the cause of the trouble. Within

six weeks from its removal, the patient will be absolutely healthy. I say six weeks, because there is a slight tenderness following operative procedures, but they will correct themselves and the patient will be in fine condition. The Doctor speaks of treating peritonsillar abscess by the use of vaccines. If you have a pocket of pus, the best way is to open it. I want to tell you a little secret that will be very good for all of you. Seek the place that is the hardest with your finger and put your knife in there, and you will always find pus if you go deep enough. With regard to diphtheria carriers, I hope Dr. O'Neill will speak on that subject. I have assisted Dr. O'Neill in some cases where everything has been done to eliminate the Klebs-Loeffler bacillus and nothing was of avail until the lymph tissue was removed. The Doctor speaks of his own case, of this rheumatism following the injection which, to those who were present last night at the Rosenau lecture, is very conclusive. It is nothing other than further infection. I want to speak again of these cases of acute infection. If vaccine will relieve it, use it, but for a permanent cure, take away the pathological condition.

Dr. A. A. O'Neill: I would state that I have not had the success in the use of vaccines that I had hoped for. Especially is this the case in the use of the antitussis vaccine for pertussis. I have given as high as 800,000,000 at a dose with no apparent diminution of the number of paroxysms or no apparent shortening of the disease. The same remarks apply with equal force to the entire list of vaccines, with the possible exception of the antistreptococcus in erysipelas. In regard to this disease there are so many remedies that have been lauded to the skies giving, according to accounts, such apparently miraculous results that I think it behooves us all to wait until this remedy (the antistreptococci vaccine) has been tried out in a sufficiently large number of cases before giving forth any dictum. Incidentally, I would like to register a protest against the use of the so-called polyvalent vaccines, for the reason that:

First: It savors of polypharmacy and shotgun methods, or the hit and miss system of administering drugs. Second: We should endeavor to find the organism that is at fault, and if possible make an autogenous vaccine. This latter is the ideal method, but ofttimes presents insurmountable difficulties. In view of the fact that Dr. Welty has spoken of the work that we have done with diphtheria carriers I might summarize it as follows:

I found that in the isolation hospital, as elsewhere, we had a certain number of individuals who, when infected with the Klebs-Loeffler organism went through the usual course of the disease, responded to the use of antitoxin, but became carriers; that is, all lesions would have disappeared from the throat, but still cultures gave us positive results, in spite of the fact that every local remedy was employed that had ever been suggested, including the use of the staphylococcus as had been suggested by recent writers. Owing to their prolonged residence in the hospital, and the fact that all remedies had failed, I suggested the propriety of removing the tonsils of these patients to Dr. Welty and Dr. Horn. This was done and Dr. Welty has removed the tonsils in some fifteen (15) cases, with the result that these cases cleared up within a week. I thought that this work was original, but upon looking over the literature, find that an Englishman has antedated me by about a year. Some of these carriers were sent into the hospital to have this work done, after having been carriers for as long a period as three months.

Dr. Williams, closing discussion: There is nothing further, any more than to thank Dr. Welty and Dr. O'Neill for their discussions. I quite endorse all that Dr. Welty says in regard to performing first all necessary surgery. The use of the other I feel is merely supplementary to that, and from that standpoint I think it will be found an aid.

SOME CAUSES OF FREQUENT AND PAINFUL MICTURITION IN WOMEN.*

By MARTIN MOLONY, M. D., San Francisco.

A large number of women suffering from frequent and painful micturition, even after the most careful treatment, fail to get permanent relief from their symptoms. These cases come to the notice of the surgeon as he takes a deeper interest in urology. By careful systematic examination he will find that the bladder irritability is an indication, not only of bladder disease, but of the kidney also. The urinary system presents a long, complex surface, and the symptoms may tend to confuse rather than throw light upon the diagnosis. We have it in our power by the aid of symptoms, or special methods of diagnosis, to localize the disease. Exploratory operations for the purpose of discovering the cause often fail. They are unnecessary since accurate information can be obtained without operation. As with the eye, who would think of giving an opinion of an optic disk without an ophthalmoscope? Yet men express their opinion freely of a diseased bladder without looking at it. The means by which many of these diseases can be located with certainty is by the use of the cystoscope. I could quote many cases where, in order to test the value of this method of diagnosis, I have adopted every method of examination, and committed my opinion to paper before cystoscopy, to find my statement often wide of the mark. Some of these diseases are more liable than others to lead us astray.

I will first refer briefly to those cases of renal disease which have the power of accurately simulating cystitis to confuse your diagnosis and defeat your efforts to give relief. Some of us cling to the belief that washing out of the bladder is the panacea for any and every case of cystitis. Our efforts are often sadly shaken by months of bladder washing and our patients, as a result, sadly recognize that we are not infallible.

Three diseases of the upper urinary tract, which you often meet in the routine of practice that simulate cystitis, and in which bladder washing is not only painful but worse than useless are: A. Bacilli coli hematogenous; B. Tuberculosis of the kidney; C. Ureteritis; I will also discuss more fully, D. Some diseases of the neck of the bladder and urethra.

A. *Bacilli coli hematogenous*: We are all aware that microorganisms pass out of the body through the kidney as through a sieve and cause no trouble whatever in their transit. Biedl and Kraus in 1895, and Klecki in 1897, after injecting anthrax bacillus, coli bacillus, or staphylococcus aureus, into the blood of an animal, showed that the microbe leaves the body by the urine, no trace remaining behind. It has been shown by well proven clinical and experimental facts, when two conditions are present, that is, an injured or unhealthy area in the kidney or ureter, and a blood

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charged with micro-organisms, the inevitable result follows in some form of irritation and disease. We know that women are particularly prone to back pressure on the kidney as the result of uterine pressure, or movable kidney. We are acquainted with the clinical history of a mild case of bacilli coli nephritis in pregnancy, with its onset of chills and headache, and frequency of micturition. The urine soon becomes murky. It is never dark colored. If shaken in a bottle and held up to the light, it has a peculiar shot silk or cigarette smoke-like appearance. It has a characteristic fishy odor which increases on standing. It contains pus and bacilli coli. A little blood is often noticed at the termination of micturition.

Then there are those rare cases of severe bacilli coli infection with rigors, high temperature, and severe toxic symptoms, that may sometimes require surgical intervention. The severe cases usually get attention and probably a cure; but it is the mild cases of coli cystitis which I wish to draw your attention to, and which are often attributed to the patient's condition—pregnancy. These are the forerunners of trouble in a great number of women. It is these cases where the symptoms are not severe during pregnancy, that are liable to suffer afterwards from continued irritation of the bladder and go untreated. When the disease becomes more chronic, the symptoms become so severe that palliative treatment has little effect. Without making an accurate diagnosis the treatment may aggravate the trouble. An examination shows the suffering to be often due to lesions of the neck of the bladder, which will be considered later.

B. *Tuberculosis of the Renal Pelvis*: I will only refer briefly to these cases. The infection resembles coli nephritis in some ways. The patient, often a young girl; it begins insidiously; there is increased desire to urinate, but always urethral pain during and after the act. The urine is murky, not necessarily bloody, and no fishy odor as in bacilli coli urine. The symptoms of the vesical distress will not decrease in force as in coli nephritis. There is increased functional activity, as seen in the polyuria. Frequent micturition may sometimes be due to a secondary infection, which is common in early tuberculosis. On the other hand, considerable disease of the bladder may exist without giving rise to any frequent urination. This is only met with when the neck of the bladder is included in the lesion. Remission of symptoms is the most common characteristic of tuberculosis of the kidney.

Looking back at the two diseases of the renal pelvis that closely simulate cystitis, they are mild coli nephritis, and mild tubercular nephritis. One has a sharp onset and rapid initial progress. The other usually insidious, with a quiet, steady progress. The vesical frequency in coli has a rapid onset and a rapid abatement. In tubercle the frequency has a steady progress, extending over years, and may be marked by remissions of some months' duration of comparative health. In both, vesical irrigation is best avoided.

I would emphasize the importance of expert bacteriology, tubercle bacilli being rarely missed, and expert cystoscopy by which early bacilli coli cystitis and tubercular cystitis could be distinguished. The ureteral orifice is the clue. Frequently the diseased kidney could be detected thereby. Radiography is rarely of value. Tubercle bacilli in the urine is not a certain sign of urinary tuberculosis in the absence of other signs, since bacilli could be demonstrated in the urine in many cases of phthisis.

C. *Ureteritis, due to Kinking of the Ureter*: This is another form of trouble that simulates cystitis, and usually the left ureter. It is a localized form of inflammation in the ureter where it passes under the broad ligament. It causes severe bladder pain and disturbance of the kidney. It is often due to dropping or prolapse of the uterus dragging the ureter with it. It is a well-known fact that a stone in the ureter near the bladder will produce all the symptoms of stone in the bladder in addition to kidney symptoms, due to obstruction of the ureter. The same frequency of micturition; the same straining; the same meatal pain in stone in the lower ureter as in the vesical stone. The same symptoms occur also in tuberculosis of the vesical end of the ureter, as in stone in the bladder. It is evident then that simple ureteritis in this situation will produce all the symptoms of cystitis, but in addition kidney symptoms from back pressure. The cystoscope and the X-ray bougie will aid in the diagnosis.

D. *Some Diseases of the Neck of the Bladder and Urethra*: The female bladder is very liable to infection along the urethra, often an ascending one. Urethritis and cystitis in women are often seen independent of renal infection. There is a general belief that urethral inflammation in women is due to gonorrheal infection; but while it may be so in many cases, there is a great number of very troublesome cases in which gonorrhea is not the origin. The most common of these is bacilli coli which had its origin in pregnancy and was overlooked. In some of these cases the cystoscope shows very slight change in the mucous membrane of the bladder. It is surprising how little in comparison to the pain and irritation produced. It may escape in some instances the notice of an experienced observer. One has to be very careful in examining closely the base and neck of the bladder. In the majority of cases the cystoscopic picture is very obvious. The mucous membrane of the trigone is deeply congested, being covered with flakes of muco-purulent deposits. Bacilli coli infection of the bladder, when allowed to persist, frequently gives rise to very troublesome urethritis followed by secondary results.

Case 1. Mrs. P., rancher's wife. 44 yrs. Four children. Usual weight 160 lbs. Now 110 lbs. Had bladder irritation during her last two pregnancies. Since then symptoms have been increasing in severity during the last five years. Was operated on for cystocele and uterine displacement. Got no relief from these operations. Frequency—every half hour to hour by day, and eight to ten times by night, accompanied by intense burning and spasm of the bladder. The pains were most severe at the termination of micturition, and for

some time after, making her cry out. She was confined to bed for several months; both legs were edematous. She was in very poor condition generally.

Urine examination: Light straw color. Turbid. Leukocytes and bacteria. Albumen—slight cloud. Organisms: Bacilli coli in pure culture.

On cystoscopic examination under anesthesia no stone could be found. Posterior urethra and neck of bladder very deeply congested, with several clearly defined ulcers all around the neck of the bladder and posterior urethra, arranged longitudinally. The outline of these ulcers was very clearly marked, with orange centers and crimson borders. Some were straight and narrow, and one on the left side was a horseshoe with an end, making it look like a Y, extending longitudinally along the end of the urethra, the other two portions of the Y at the neck of the bladder. These ulcers were treated with pure phenol, and again 10 days afterwards when the ulcers were seen to be almost healed. The horseshoe ulcer was still present but much shallower and paler in color. From henceforth the patient improved rapidly. Bladder spasms and painful micturition disappeared. Four months afterwards her health was much improved; her weight was normal; her frequency was two or three hours by day and once or twice by night.

On this occasion she had further treatment of the neck of the bladder. Now, 18 months after, she writes to say that she is almost normal and able to attend to her household work on the ranch.

This was a clear case of bacilli coli infection during pregnancy which years afterwards became aggravated, causing the most intense suffering.

Case 2. Mrs. C. Age 71 years. Case of sudden stoppage of urine, followed by severe spasm and pain; using catheter constantly. Polypoid condition of neck of bladder. Had a little trouble with frequency before marriage. No children. For 20 years the bladder trouble has been very severe. Has to use a catheter constantly owing to the difficulty in passing urine. Has frequency by day every half hour to one hour; by night from four to 20 times. The pain and spasm is excruciating, at times causing prolapse of the rectum. Urine contained coli and staphylococci.

On cystoscopic examination bladder was quite normal; no stone found. Small bulbous polypoid masses around neck of the bladder. Some erosions. Destroyed with cautery and phenol. Gave a second treatment two weeks afterwards. Improved rapidly, went home to the country, returned in three months. Passes urine three to five times daily. Sleeps from 10 p. m. to 5 a. m. without getting up. Has never used catheter since and no frequency. On cystoscopic examination of the bladder, could find nothing abnormal in the neck. Gave a little further treatment. Last report, two years afterwards, in excellent health and no trouble whatever with her bladder.

Case 3. Mrs. L. Age 24 years. Case of bulbous condition around neck of bladder, with papilloma causing sudden stoppage of urine during micturition. Three years ago her uterus was curetted and bladder catheterized. Since then has had frequent attacks of burning and frequency in urination, with slight bleeding. Never urinates without pain. Urine sometimes stops suddenly during urination and after waiting starts again. Had two operations for removal of caruncles, but got no relief from these.

Urine contained bacilli coli in pure culture. Gets no acute attacks now, but has pain always during and after urination.

Cystoscopic examination: Bladder and ureters quite normal. Trigome hyperemic. Neck of bladder very deeply congested, with very irregular, nodular conditions. On the floor were some papillomatous filaments. This case was treated with D'Arsonval current. After the first treatment the pain in micturition disappeared. After two further applications, the sudden stoppage in the flow of urine ceased and the patient urinated freely. This case I have not seen for some months.

The last few cases I have treated with both the D'Arsonval and Oudin currents. This method has the advantage of causing less pain than the other methods. The work can be done in the office, but it requires more frequent treatments, whereas the treatment by cautery or phenol causes considerable pain and may require supra-pubic opening of the bladder.

A form of irritable bladder is very common in women where the patient suffers from frequent urination by day and night; although it is most troublesome and causes great discomfort to the patients, they hide their trouble and suffering rather than seek advice. There are other cases of persistent incontinence in women, which I hope to discuss on another occasion.

Case 4. Lady, 25 years. This patient was troubled with severe pain and frequency, only relieved by lying down and hot applications. Had to give up business. Neck of bladder was deeply congested with superficial erosions. After one application of the D'Arsonval current, she wrote to say that she suffered excessive pain for 12 hours, but next morning she was quite free of pain and went back to work. I have not seen her since.

Case 5. Mrs. W., 42 years. Two children. This patient had suffered for many years with irritable bladder, causing great inconvenience by day and night. The infection was bacilli coli. There was congestion and erosion around the neck of the bladder. Three treatments with the D'Arsonval current. She can now spend the whole afternoon shopping without any trouble, and does not get up at night.

Discussion.

Dr. Henry Meyer: I have listened to Dr. Molony with a great deal of interest. There are some things I would like to speak about. The doctor stated that in cases of tuberculosis of the kidney involving the bladder, we do not often have frequent urination unless the neck of the bladder is involved. I do not think that is so. I remember seeing one case of tuberculosis of the kidney in a young girl in which the kidney was practically destroyed. I could find no involvement of the bladder. That patient suffered much from painful and frequent micturition. I think we have all seen cases of secondary tuberculosis of the bladder with ulcerations around the ureteral orifice, with painful and frequent urination. That is what usually brings them to the doctor.

I do not quite understand how this D'Arsonval current cures in cases of colon bacillus infection. We know the value of that current in the treatment of papilloma of the bladder, but I do not think it has any influence over bacterial infection, and I doubt if these cases treated by Dr. Molony in that way were cured.

We meet with a certain form of painful urination in women in many cases where absolutely no pathological condition can be found in the urine or elsewhere. It is a most interesting type of case. I have seen it in women with absolutely clean bladders, clean urine, everything normal, and still this painful and frequent urination, so much so that in time the bladder becomes contracted; and without being able to determine the cause of these symptoms, most of these patients make good recoveries. In these cases one can find nothing in the urethra except sensitiveness. The eye will determine nothing. Dilatation of the urethra and gradual distension of the bladder seems to give complete relief. This is the most interesting variety of case that you meet, with these symptoms.

Of course, there is one other condition you may find that the doctor did not mention: a very common one, though not so common in women as in men, and that is stone in the pelvis or in the kidney proper, or in the ureter. There are also cases of foreign bodies in the bladder which are not so infrequent in women.

Dr. Molony, closing: In this discussion Dr. Meyer has evidently overlooked some points I have already mentioned. The frequency of micturition in tuberculosis of the bladder may be due to secondary infection, or it may be caused by tuberculosis of the ureter. It is an established fact that you may have extensive disease of the bladder without giving rise to frequent urination under conditions already stated. Many fallacies exist in renal tuberculosis, as Dr. Meyer states, the first subjective symptoms are often vesical ones, while the bladder is still perfectly normal. Yet you may have the contrary, in "closed renal tuberculosis," where the patient with a diseased kidney has no bladder symptoms whatever and may appear perfectly well for months or years. In this case you have complete obliteration of the lumen of the ureter. It was only in very recent years that Dr. Beer of New York first made use of high frequency current in the destruction of bladder papilloma. It is stated by some authorities that these currents seem to have a special affinity for diseased conditions of mucous membranes.

Papilloma or bullous growths, or ulcers, in the neck of the bladder, are lesions that harbor infection. When these lesions are treated by D'Arsenval or Oudin currents with fine wire insulated electrode they shrivel up and disappear, leaving a healthy condition of the mucous membrane.

I presume an electric current that will destroy a lesion of this description will also destroy any bacilli or infection in proximity to that lesion. The lesions disappear, the patients are relieved, some of them after years of great suffering. It would be rash to say that the application of electric currents to lesions in the neck of the bladder would cure infections coming from the upper urinary tract. Some of these cases had already been treated by dilatations and bladder washings, only to aggravate the condition. Foreign bodies and calculi in the bladder are outside the scope of this discussion. I have seen no cases reported in recent literature similar to this one of clearly defined ulcers of the neck of the bladder and posterior urethra. I have made no deliberate search, so I presume there may have been.

NUTRITIONAL DISTURBANCES OF INFANCY.

By GEORGE D. LYMAN, M. D., San Francisco.

The German school of pediatrics headed by such men as Finkelstein, Czerny and Myer look upon infantile intestinal disturbances somewhat differently from what we do. We are apt to put an emphasis on bacteriological findings. The Germans emphasize errors in feeding. Every infant, according to this idea, has a certain amount of tolerance for the fat and carbohydrate of cow's milk. When this tolerance is overstepped, and has been abused over a considerable length of time from a formula too high in fat or carbohydrate, the infant reacts with a nutritional disturbance. Finkelstein has invented a terminology for these several conditions, which has been generally adopted in Germany and Austria, and which we wish to present here. An abuse of the tolerance for fat results in a "balance" disturbance. When the tolerance for carbohydrate has been abused dyspepsia results; decomposition, when both carbohydrate and fat tolerance have been abused and intoxication is an extreme intolerance for carbohydrate.

When we first went to Germany and took up the nutritional disturbances from a German standpoint we were up in the air so far as understanding the terminology was concerned. We did not know that "balance disturbance" was simply an intolerance for fat, that dyspepsia was a reaction against carbohydrate, milk sugar in particular, that decomposition corresponded to marasmus and that alimentary intoxication was summer complaint and cholera infantum sporting under a foreign name. The old familiar conditions had taken on such distinguished handles that for the time being we were nonplused and did not find ourselves until we had delved into the German literature on the subject and ferreted out the details. It has occurred to us that some of you may find yourselves in a similar boat and not seeing any familiar landmarks at hand drift helplessly to sea. On this account we are setting forth here a description of these conditions hoping any shipwrecked medico will find sufficient elucidation to reach familiar ground again.

NUTRITIONAL DISTURBANCES OF INFANCY FOLLOWING AN ABUSE OF TOLERANCE FOR FAT AND CARBOHYDRATE.

(According to Finkelstein and Czerny.)

I. *Balance Disturbance* or weight disturbance.
Bilanz Störung, Finkelstein.
Die Milchnährschaden, Czerny.
Due to an abuse of tolerance for fat.

II. *Dyspepsia.*
Abuse of tolerance first for carbohydrate then for fat.

III. *Decomposition.* (Marasmus) Finkelstein.
Mehlnärschaden (Czerny).
Extreme intolerance for fat and carbohydrate.

IV. *Alimentary Intoxication.* Cholera infantum; summer complaint.
Developing from second and third.
Extreme intolerance for carbohydrate.

BALANCE DISTURBANCE OR WEIGHT DISTURBANCE.

The infants suffering with balance disturbance supply the cases we see so plentifully in our clinics and private practices. They are the great class of babies who, without exhibiting any morbid symptoms, remain far behind the average infant of the same age in size and in weight and who are brought to us because they do not gain. On examination we find that the turgor is poor, the muscles are soft and flabby, the abdomen distended, the skin dry, color pale and the motor and restive functions so impaired that the infant is away behind his age. The mother tells us that the child is continuously fretful, whines, sleeps poorly and does not nap during the day as a healthy infant should. These little sufferers are subject to furunculosis and intertrigonous eruptions. They have running noses and frequent attacks of bronchitis, all due to the lowered resistance.

The stools, in the less severe cases, are not particularly distinctive. They appear normal or lighter in color. In the more pronounced cases the stool is typical of the condition—the dry,

white formed or crumbly—"kalk seife" or soap stool. In some cases the stool is so dry and well formed that it rolls off the diaper on changing. Chemically these stools are found to contain much more earthy alkalies and much less fatty acid and neutral fat than the normal stool. In other words there is an increased output of alkalies, mainly the K and Na.

In most cases the condition is due to an overfeeding with milk with a deficiency of carbohydrates. In other cases there is a failure to thrive due to the milk formula used and in still other cases the child is weakened through intercurrent infection and cannot take care of the prescribed milk formula. Here is a condition where it is dangerous to feed by age without consideration of weight and body surface. The physician in charge looks up his chart for a feeding formula for an infant of three months say, and writes out the formula, and the child does not gain in weight. He does not take into consideration that other factors than age are important Ready-made formulas do not fit the average baby any more than ready-made suits fit the average man. A formula, like a suit, has to be tried on.

Czerny says the milk fat is the factor in the causation of this condition and proves his assertion by proving that these cases gain when put on a formula rich in carbohydrates and poor in fat.

Finkelstein believes the part played by the fat is secondary to the fermentation of the milk-sugar and shows that these cases gain when put on a malt preparation instead of lactose.

The diagnosis of "Balance Disturbance" is made when the infant is not gaining, has no diarrhea, no history of other infections and is receiving one hundred calories per kilogram.

Treatment: The indication here is to limit the amount of milk and increase the percentage of sugar. In the less severe cases giving a formula in which the percentage of fat is low and adding at least three per cent. of sugar is all that appears to be necessary. As milk sugar ferments very easily, it is better to use some other preparation, preferably the maltose dextrine preparations. Sometimes better results are obtained when two carbohydrates are given in conjunction, that is, when small quantities of oatmeal, wheat or barley flour are given in conjunction with some other carbohydrate. Often there will be no gain by the simple addition of maltose; but when one per cent. of oatmeal or wheat flour is added, an immediate gain takes place. Carbohydrates can be added up to six or seven per cent. This second carbohydrate can be given as the dilutant. That is, one tablespoonful Quaker Oats can be boiled in one pint water for one-half hour and strained. Evaporation being made up in the finished preparation by the addition of boiled water and this oatmeal water can be used to dilute the milk. Or a modification of Liebig's malt soup or Keller's malt soup may be given. In the more severe cases these two preparations are invaluable.

Malt soup is prepared as follows: In a shallow vessel, fifty grams of wheat flour are warmed in one-third liter of milk, stirring constantly. In a second vessel one hundred grams of Loefflund's malt soup extract are dissolved in two-thirds liter of water. Both preparations are mixed, allowed to boil and poured through a fine sieve.

Malt soup is only to be recommended for infants who have passed the age of three months. Experiments have shown that under three months the infantile digestion cannot take care of carbohydrates in any great quantity. Keller's malt soup is also to be recommended when by other methods constipation results.

Buttermilk prepared with five to ten grams of wheat flour and fifty to seventy grams of malt sugar is also to be recommended. After the preparation has been given for six to eight weeks it is best to resume feeding with an ordinary milk mixture.

DYSPEPSIA.

This condition can be either primary or follow on the heels of a balance disturbance, and is due to an absolute or relative over feeding, or the tolerance for carbohydrate has become so abused that fermentation cannot longer be held in check and increased peristalsis and diarrhea ensue.

Dyspepsia is characterized by gastro-intestinal symptoms. There is loss of appetite, vomiting, regurgitation, flatulence and colic. On account of the colic the child is very restless. This colic is probably due to the lack of motor function and in the examination of the stomach contents there is a deficiency of Hcl. The stools are increased in numbers, thin in consistency, contain mucus and are either watery or minced and chopped. They give an acid reaction, have a sour odor and the color is green. The little patients are pale, sleep superficially and whine and cry a great deal. On examination the turgor is found to be of poor quality, the body weight is at a standstill or there are slight daily losses. The temperature is usually subnormal.

Pathology: The local symptoms of dyspepsia are due to fermentation of the stomach and intestinal contents. The primary cause of this increased acidity and fermentation is the carbohydrate; the fats play only a secondary part and commence to cause trouble when the carbohydrates have begun the disturbance. This can be proved by treating these cases with a milk dilution containing low carbohydrate percentages, when all the symptoms will disappear. Of the sugars, milk sugar ferments the easiest, then cane and least of all the maltose dextrine preparations.

Treatment: By far the best results are obtained with these infants by resorting to breast milk, especially at the time when the little victims are under three months of age. In the severe cases it is best to begin with small amounts and gradually increase.

When artificial feeding is resorted to it is best to proceed as follows: First, wash out the stomach and the bowels, or administer proportionate doses of castor oil or calomel. For the first twelve to twenty-four hours nothing should be given by mouth, but weak tea sweetened with saccharin. After that the feedings can be begun again, but it is necessary to proceed very carefully.

One-third the required amount should be given. Fifty grams per kilogram with appropriate dilution should prove sufficient. About every two days the strength of the food can be increased. The safest dilutions are those which contain the least possible amount of fermentable sugar. For the less severe cases, milk not too rich in fat, without addition of sugar and diluted with oatmeal water is especially recommended. As the infant begins to improve carbohydrate in some form may be added. The maltose dextrine preparations give the best results. Under no circumstances should milk sugar be used. In the more severe cases it is wise to use skimmed milk or buttermilk appropriately diluted and without addition of sugar.

Many pediatricians think buttermilk, on account of its sourness, has a beneficial influence. When it is possible to add more carbohydrate the gain in weight takes place immediately. When there is a too great and too prolonged deficiency in carbohydrate there is danger of inanition.

If with the addition of sugar there is no gain in weight, it is due to a light infection or beginning decomposition, and when due to a beginning decomposition it is well to resort to breast milk or eiweiss milk, of which we will speak in detail later.

DECOMPOSITION (MARASMUS).

This is a severe form of the condition produced by a mixture too rich in fat or carbohydrate.

The chief symptom is the great loss of weight, which in the beginning is slow and later proceeds more rapidly. So that ultimately the skin hangs in folds on the wasted bodies, and the infant looks like a little old wrinkled man. The hands are so emaciated that they are claw-like. The abdomen is usually distended, often rigid. The muscles are flabby and hypertonic. Color pale and anemic, later grayish The mucous membranes retain their red color, and the lips look as though rouged.

In the beginning these infants are in a state of excitation. They whine piteously and continuously and take little nourishment Later they sink into a state of apathy or semi-torpor. The pulse is irregular and slow. The temperature is subnormal and subject to wide fluctuations. Edema and cyanosis are common. The urine is free from albumen and sugar. The stools are dyspeptic, either loose and watery or formed. In the latter condition they are apt to contain considerable fat. In this condition a diagnosis of fat diarrhea is apt to be made. At times the stools are tea colored, black or reddish black, due to blood. In this wretched condition it is very easy for the infant to succumb to a secondary infection, bronchitis, pneumonia, furunculosis, cystitis or some pyemic condition. It has been found by autopsy that a not small percentage of these cases succumb to duodenal ulcer.

Pathology: Czerny believes that this condition is the outcome of fermentation so that normal absorption cannot take place in the intestine. He believes also that a pathological change takes place with the water and salt content of the cells, as increased amounts of salt are given out in the stool and increased amounts of moisture through the lungs. Following this loss of salt through the intestine there is an increase of N H in the urine. To reimburse this loss the body depots are called upon with a resulting destruction of cell substance. Then inanition ensues, the digestion of fat and carbohydrate fail, fermentation prevents the absorption and increases the peristalsis, the milk goes undigested through the intestine. In this way the great loss of weight can be understood and accounted for. The body cells cannot functionate properly and an intoxication ensues.

Treatment: The infant suffering from decomposition should not be put upon a hunger period and should have breast milk if possible. It is best to begin very carefully with the amounts given. It is not safe to give too large quantities. There is danger of increased fermentation and with too small quantities of inanition. It is best to proceed as follows:

Give as the total quantity for the day seven to ten ounces, divided into eight to ten periods. Every two days the amount should be increased up to the seventh to tenth day when one hundred calories per kilogram should be given.

In the first few days there is not much improvement. In fact the general appearance may be worse. The patients are paler, duller, have subnormal temperatures, and irregular pulse. At times it is seven to eight days before the weight is stationary and the baby begins to mend. This reparation period can be hastened by giving buttermilk with small additions of carbohydrate or malt soup, although it is better to give neither before the fourth week. It is two or three weeks before the infant is sound again. Then comes the question of return to bottle feeding. When it is not possible to get breast milk, it is best to use buttermilk or a milk dilution with a weak fat percentage.

In the first stages of this condition eiweiss milk is especially to be recommended. It is easier to give additions of carbohydrate in this media, the tolerance is increased and the casein antagonizes the fermentation present. It is also advantageous in that it is possible to go over to artificial feeding without stirring up fermentation Through it the danger of inanition is eliminated and the reparation accelerated. It is best here to begin with small doses—ten ounces divided into five or six periods. Every two days three ounces more are given and when the stools are good the amount is increased more rapidly until the infant is receiving one hundred and eighty to two hundred grams per kilo weight. The total daily amount should not be increased over one thousand grams, 1 liter. When the stools have improved an addition of sugar should be given, such as the maltose dextrine preparations, at any rate three per cent. and gradually increase to five or six per cent. and one per cent. additional of some flour. Eiweiss milk should not be given longer than six to eight weeks. After this time the infant is so much improved it is possible to give a milk mixture.

ALIMENTARY INTOXICATION.

The most severe degree of acute nutritional disturbance is the alimentary intoxication or

cholera infantum. In this condition the accompanying symptoms are so much more prominent than those from the intestine, that the latter stand in the background. In a pronounced case, there are nine prominent symptoms. In conjunction with the diarrhea there is a characteristic unconsciousness, toxic respirations, albuminuria, glycosuria and casts in the urine, fever, loss of weight and a leukocytosis; but it is not necessary to have all these symptoms present at one time in order to make a diagnosis of alimentary intoxication.

(1) Fever. This is the most important of all the symptoms, although there is nothing particularly characteristic about it; it reaches one hundred and four to one hundred and five degrees gradually but following a hunger diet of twenty-four hours, falls by crisis to normal or subnormal, which proves that it is of a purely alimentary nature.

(2) Glycosuria. This is also alimentary in nature and appears early. If the infant is fed on milk sugar it is lactose which is most frequently found in the urine, although of late other sugars have been found.

(3) Albumen and casts and sometimes red and white blood corpuscles are found in the urine. The amount of urine is small in quantity and cloudy, the number of uric acid crystals present suggests an infarct. The presence of albumen and casts is not due to a nephritis but to the destruction of the tissue cells. It never results in a nephritis but ceases with the healing of the alimentary disturbance. The presence of sugar is due to a functional disturbance of the intestinal wall.

(4) Diarrhea. Of the diarrhea there is nothing particularly characteristic. In the beginning there are many loose and watery movements. Later when the toxic symptoms are more prominent there is atony of the intestines.

(5) Loss of weight. The great loss of weight is due to the loss of water which leaves the body through the intestines, lungs and often through vomiting. The amount of urine is decreased. The general appearance now is particularly characteristic. The face is peaked and pinched, the fontanel is sunken and the skin has a peculiar consistency like dry leather

(6) Unconsciousness. In the beginning, these infants are in an excitable condition, restless, unsatisfied, cry a great deal and toss about the bed. In between there is abnormal dulness and apathy. As the condition becomes worse the restlessness increases, the movements of the extremities become automatic, almost cataleptic. The little arms are held in what the Germans call "die Fechter Stellung" or fighting position. The face wears an anxious expression and finally begins the whining cry which lasts for hours at a time. This stage goes on slowly to one of depression. The cry ceases. The infant becomes ominously quiet. The facial expression becomes mask-like. The arms are held on the breast in a cramp-like position with the fists doubled. There is strabismus of the eyes and myotic pupils.

(7) Change of Respiration. It is toxic in nature and resembles the respiration seen in diabetic coma.

(8) Collapse. Finally there is complete collapse of the infant. The extremities and the nose are cool. The reflexes are abolished Pulse is very weak. The heart tones barely audible and the skin becomes grayish in color.

(9) The Leukocytosis is of little importance. Soor is the most frequent complication.

Pathology. Czerny believes the cause of the intoxication is bacterial fermentation of the milk either in the intestine or before being ingested. The carbohydrate and the fat of the milk offer a good proliferating media for the bacteria and an overproduction of fatty acids and an acidosis follows.

Finkelstein on the other hand thinks the bacteria plays a minor role. He finds the carbohydrate and salts in the whey, the injurious elements. His supposition is that the whey in the intestine is unfavorable for the normal procedure of digestion and a fermentation results. This fermentation starts with the carbohydrates and then includes the fats. Fermentation products result particularly in an acidosis.

Treatment. For the first twelve to twenty-four hours a starvation diet, that is the infant receives no nourishment, only fluid to drink. The fluid must be pushed as the little body is fairly well dried out and sadly in need of fluid. For this purpose a weak tea solution; boiled water or Heim Johnsche solution (Nacl 5.0; Nahco3 5.0; Aq. 1000) or Moro's carrot soup diluted 1:2 are to be recommended. The Murphy drip and subcutaneous injection of normal salt solution are also great aids in getting fluid into the little water-depleted bodies. If necessary the stomach can be lavaged and an enema given. It is better not to use castor oil or calomel. It may be necessary at this time to give some stimulation, camphor or caffeine subcutaneously or five to ten drops of cognac in water every three hours. There is at this time continual danger of collapse. If the body is cool a mustard bath is to be recommended.

After twenty-four to thirty-six hours these little patients are much improved. The temperature falls by crisis and is either normal or subnormal, which point, above all else, proves that the temperature is of an alimentary nature. The diarrhea is less. The toxic symptoms have disappeared. Now it is necessary to proceed very carefully; the least overfeeding is apt to result in a relapse and continuance of the toxic symptoms.

Above all other forms of food offered, mother's milk is indicated here. The little sufferers are too weak to suck at the breast and it is necessary to express the milk for them, the quantities should be small and repeated frequently. One teaspoonful ten times during the day, and on account of the danger of relapse it is necessary to proceed slowly and gradually. After several days of this careful feeding it is possible to put the infant directly on the breast.

With artificial feeding of every kind there is the continual danger of lighting up the old toxic condition. On this account it is best to use preparations weak in carbohydrate and fat. Skimmed milk and buttermilk without sugar offer good

media. The last is especially commendable on account of its high salt content. It is best to begin with small amounts and gradually increase until it is possible to add carbohydrate in one form or another.

Another good food for this condition is Finkelstein's Eiweiss milk. The curd of a quart of whole or liquid milk which has been coagulated with pepsin-rennet, etc., is thoroughly washed in cold water to remove all the whey and is then put through a hair sieve to break up the curds. This should be done at least twice. The curd is then mixed with a pint of buttermilk and a pint of boiled water. It is especially to be recommended because we have a mixture with the smallest possible percentages of sugar and fat—2.5% of fat and 1.5% milk sugar—the two elements to be avoided on account of danger of fermentation; the whey is diluted so that the tolerance for sugar is improved and the increased amount of proteid antagonizes the fermentation.

It is necessary to give the Eiweiss milk in small quantities at first and as soon as the stools are improved in quality, 3% sugar should be added, but in the form of malt sugar. Without this addition a gain is impossible.

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A CASE OF COMPLETE DUPLICATION OF THE RENAL PELVIS AND URETER.*

By ARTHUR B. CECIL, A. B., M. D., Los Angeles.

Cases of complete duplication of the renal pelvis and ureter are relatively infrequent. In 649 operations on the kidney and ureter reported by Braasch from the Mayo clinic seven cases of complete duplication of the pelvis and ureter were encountered. Gross congenital abnormalities in general, however, of the kidney and ureter are by no means uncommon and from the fact that these abnormal organs are so frequently the seat of disease, one should always be on guard for their detection in the study of diseases of the urinary tract. Perhaps in no class of surgical cases is a preoperative diagnosis of such vital importance.

The introduction of pyelography by Volcker and its extensive application by Braasch has made it possible to demonstrate, previous to operation, gross anatomical changes in congenital abnormalities. Geraghty, of Young's clinic, through the introduction of phenolsulphonephthalein as a functional test has added a method of inestimable value in that it is now possible, not only to demonstrate gross anatomical changes, but to determine the actual functional value of the renal parenchyma.

In the following case the anatomical abnormality was demonstrated by the injection of colloidal silver and the functional value of the right kidney and the two portions of the left by the use of phenolsulphonephthalein.

* Read before the Los Angeles County Medical Society, October 1, 1914.

Case Report: Mrs. C. L. W., age 48, married, was referred to me for urological examination by Dr. W. M. Lewis, of Los Angeles, on August 12, 1914. She complained of being unable to urinate, of being feverish and worn out. Her father died at the age of 63 of heart trouble. Her mother died of tuberculosis. She had five brothers and they are all living and well.

Previous History: As a child she had measles, mumps and several attacks of tonsillitis. From childhood she has never been robust, but was never actually sick until she became pregnant in 1891. During the entire pregnancy she suffered greatly with nausea and general weakness. The weakness became so marked that for five weeks previous to the birth of her child she was confined to her bed. About one week prior to the birth her face and limbs became greatly swollen and pitted on pressure. Her physician told her that she had a form of Bright's disease. For three days previous to the birth she passed bloody urine and this continued at every urination until the child was born. At no time did she suffer pain or discomfort in either renal region. Immediately after the birth of the child her condition rapidly improved. The edema subsided and she felt well. In 18 months another child was born and during this pregnancy she was able to attend to her household duties until labor pains began. She did not suffer with edema during this pregnancy nor did the urine at any time contain blood. There was a perineal tear and a repair of the perineum was done in 1896. Following this pregnancy she suffered with a constant bearing down sensation

Cut No. 1. Collargol injection. Note normal outline of the right renal pelvis and ureter and duplication of left renal pelvis and ureter. The caudal portion of the left pelvis is hydronephrotic and most of the collargol has returned alongside of the catheter into the bladder. The arrow points to a small amount of collargol which has passed the obstruction and entered the hydronephrotic sac.

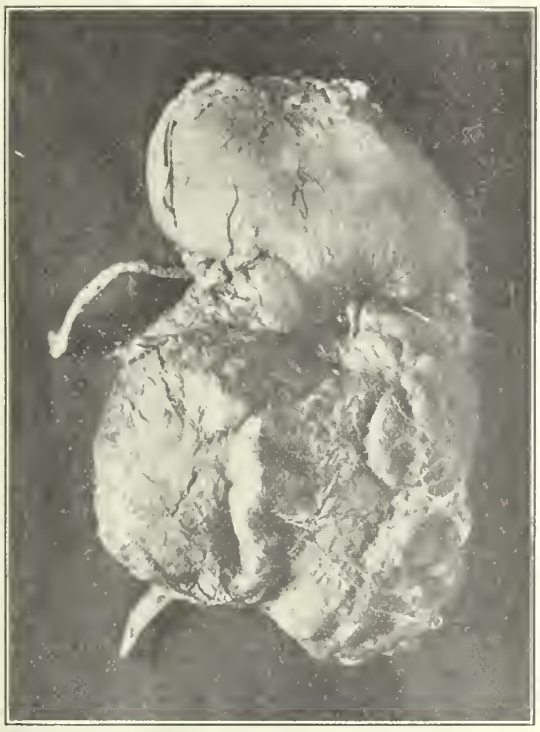
and for the relief of this the uterus was suspended in 1903.

Menstruation began at 14. The flow was usually very slight and never lasted over three days. At the time of menstruation she suffered severe cramp-like pains in the lower abdomen. These pains caused her to be confined to her bed at each menstrual period. This condition was entirely re-

lieved by a dilatation and curettage in 1900. In 1908 her mentality became affected. At times she seemed in a comatose state, at others she had hallucinations. She was put in a sanitarium and in six months had entirely recovered.

Has never had renal colic; has never passed a stone.

Present Illness: Onset gradual. Three years ago noticed that she had to get up at night to urinate. At first she would urinate about twelve o'clock and again in the early morning. Urine passed easily and there was no burning. There was no increased frequency during the day. The urination at night became more frequent so that about two



Cut No. 2. Photograph of specimen removed. Hydronephrotic sac surmounted by well-formed renal mass. Note duplication of ureters.

years ago she would have to get up at night four or five times but during the day would not urinate more than three times. About this time (two years ago) she commenced to suffer with burning on urinating. At the same time she noticed some difficulty in starting the urinary stream. After straining for some time a half cupful would be passed. There was no dribbling. Hot cloths were used to relieve the pain which seemed to be at the neck of the bladder. In November 1913 she had complete retention and had to be catheterized. She was then able to void until August 9, 1914, when she again had complete retention and had to be catheterized. For several months previous to this she had felt extremely weak and run down. There was no actual pain, except the burning at the neck of the bladder and burning on urinating. On August 5, 1914, she was taken with chills and fever. She seemed to be smothering. Three days later she noticed for the first time a fullness in the left side. She told her physician that it felt as if she had a blown up paper bag in the left side. The next day she had to be catheterized and the urine was dark red in color. It was necessary to catheterize her then until she came to the hospital on August 12, 1914.

Examination: Poorly nourished woman, feverish and weak. Pupils equal, react to light and accommodation. Knee kicks about normal, station good. Lips dry, tongue coated, breath foul. In the left abdomen is a mass which extends from beneath the costal border to below the iliac crest and to about four cms. mesial to the left mammary line. The mass is rounded and more prominent below than above. It is movable and fluctuates. With one hand in the left flank it can be pressed anteriorly. There is no marked tenderness over the mass. The abdomen shows no general rigidity. It is not generally distended.

Catheterized specimen of urine: very cloudy, acid reaction, no sugar. Centrifuged specimen shows enormous numbers of pus cells, few red blood cells, large numbers of motile bacilli. The supernatent fluid shows moderate cloud of albumin.

Cystoscopic Examination: Bladder capacity 560 c.c. The urethral orifice appears normal. The bladder wall is injected and edematous in the region of the trigone. The bladder is not trabeculated. No stone, no tumor, no diverticula. No ulceration anywhere.

The interureteric band is peculiar in that while the right side appears quite normal the band becomes broader and extends relatively further out on the left than on the right. The right ureteral orifice is oblong in shape. Its edges are not everted or edematous nor is there any injection or ulceration about its mouth. The urinary eflux is normal. On the left side is seen an ureteral orifice which occupies about the normal position. The edges of this orifice are edematous and injected. Urine can be seen squirting from this orifice. About one centimeter to the left and about 0.5 cm. above a small punctate opening is seen. This orifice is very small and in every way resembles the ureteral orifice after nephrectomy. Nothing is seen coming from this orifice. With ureteral catheter it was found that all three orifices permitted catheterization. The three ureters were catheterized and specimens collected for examination.

RIGHT	LEFT	
	Mesial orifice	Lateral orifice
Clear light yellow. Slight trace albumin. No pus, no red blood cells. No organisms, no casts, no crystals.	Clear light yellow. Slight trace albumin. Few pus cells, no red blood cells, no crystals, no casts, no organisms.	Very cloudy purulent material when pressure is made on the abdominal mass. Enormous numbers of pus cells, few red blood cells, many motile bacilli.
Intravenous injection of 6 mmgs. phthalein.		
Appeared in 4 minutes.	Appeared in 4 minutes.	No phthalein in 34 minutes.
First 15 minute collection.		
30 C.C. 17.2% phthalein.	19 C.C. 15.2% phthalein.	3 C.C. purulent material. No phthalein.
Second 15 minute collection.		
25 C.C. 10.5% phthalein.	12 C.C. 6% phthalein.	4 C.C. purulent material. No phthalein.

Catheter passed into the bladder showed that there was no leakage.

An X-ray examination by Dr. W. B. Bowman was negative for stone. All three catheters were injected with colloidal silver by the gravity method and an X-ray taken. The right renal pelvis and ureter appear normal. The right kidney is in normal position. It was found that the mesial orifice on the left was the orifice of an ureter which led to the superior pelvis and the lateral ureteral opening was that of a ureter which led to the inferior pelvis. The lower pelvis being hydronephrotic, the upper pelvis was well formed. (See Fig. 1.)

The patient was operated on August 14, 1914, by Dr. W. M. Lewis and a large hydronephrotic sac surmounted by a rather well formed renal mass was removed. The pelves were found to be entirely separate. The ureters lay back of the renal mass. (See Cut 2.)

Huntington has pointed out that congenital abnormalities of the kidney and ureter present characteristics dependent upon arrest of or disturbances in the normal process of development.

Duplication of the renal pelvis and ureter, either partial or complete, has its explanation in an early division of the main renal bud. In the case of complete duplication the renal bud is double from its very inception from the Wolffian duct. The duplication is simply a disturbance of the normal development of the typical dichotomous renal pelvis.

In this case it was possible to determine, previous to operation, the value of the three portions of renal tissue and to point out the possibility had it been necessary of a bisection of the left kidney. The function of the right kidney in this particular instance, however, as determined by the use of phthalein was known to be practically normal and for this reason the problematical result of a bisection of the left kidney did not have to be considered.

REMEDIES FOR INDIGESTION MUST BE PROPERLY PREPARED AND SOLD WHILE FRESH.

Washington, D. C.—The Service and Regulatory Announcements of the Bureau of Chemistry, U. S. Department of Agriculture, state that examination of a number of products which purport to contain certain enzyms or ferments supposed to be useful in promoting digestion shows that these contain little, if any, of these active agents. Further investigation shows that the manufacturers frequently have employed a sufficent quantity of pepsin, diastase, pancreatin, trypsin, or similar material, but in many cases no attempt has been made to determine whether the material used is really active. In certain cases, manufacturers have combined pepsin and trypsin which tend to negative each other, and in other cases they have used its pepsin in alkaline media, which destroy activity, and have combined trypsin with acid substances which are not suited to it. Under certain methods of preparing the remedies, heat is applied to a degree that may destroy the activity of the pepsin or other enzyms. Similarly, many of these substances which owe their properties to the action of enzyms, are put up in too strong alcoholic solutions or in other ways which lessen their effectiveness.

The great trouble with many of these preparations, however, is that they do not keep well, and while active at first, after a time lose their digestive activity. The Department of Agriculture therefore warns manufacturers that preparations claiming to contain digestive enzyms should be put up in such a way that they will have suffered little, if any, loss of activity when sold to the consumer.

In the case of preparations which are liable to deterioration within a few months, the Department suggests that each lot should be dated, and that sales after a certain fixed time should be prevented.

IN ERRATA.

Dr. A. J. Zobel's paper on "Early Diagnosis of Cancer of the Rectum," appearing on page 376, was omitted from the general contents in the December issue 1914.

Also Dr. H. E. Ruggles' paper, which appears on page 284, "Six-Hour Stasis," was omitted.

SOCIETY REPORT

BUTTE COUNTY.

Butte County Medical Society held its monthly meeting at the offices of Dr. M. P. Stansbury, Tuesday evening, November 17, with the following members present. Drs. E. E. Baumeister, President P. L. Hamilton, C. C. Landis, O. Stansbury, M. P. Stansbury and Ella F. Gatchell.

Dr. M. P. Stansbury presented the subject of "Diagnostic Errors" in a very interesting and novel manner.

ELLA F. GATCHELL, Sec'y.

SACRAMENTO COUNTY.

The regular November meeting of the Society was held on Saturday evening, November 21st, 1914, at the Hotel Sacramento, at 8:30 o'clock, and was a joint meeting with The Sacramento Valley District Dental Society.

Subjects:

1. "Dental Conditions as Related to the Development and Diseases of Children." By W. P. Lucas, M. D., Professor of Pedriatics, University of California.

2. "The Relations of Medicine to Dentistry." By J. G. Sharp, M. D., D. D. S.; Professor of Surgery, University of California, Dental Department.

3. "Syphilis of the Mouth" (lantern slide demonstration). By Howard Morrow, M. D., Professor of Dermatology, University of California.

All members of the Profession visiting in Sacramento were cordially invited to attend.

F. F. GUNDRUM, M. D., Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of November, 1914, the following meetings were held:

Medical Section, Tuesday, November 3d.

1. Notes on Angina Pectoris. W. W. Kerr. Discussed by H. D'A. Power.

2. The Use of Perfusion Mixtures in High and in Low Blood Pressures. J. J. Hogan. Discussed by G. M. Barrett and H. D'A. Power.

General Meeting, Tuesday, November 10th.

1. Dermatitis Caused by Primula Poisoning. D. W. Montgomery and G. D. Culver. Discussed by Emmet Rixford.

2. Hernia in Relation to Accident Insurance. Emmet Rixford. Discussed by J. A. Haderle, S. O. Beasley, L. Eloesser and F. D. Tait.

3. The Orthopedic Treatment of Fractures. J. T. Watkins. Discussed by Emmet Rixford and C. E. Farnum.

Surgical Section, Tuesday, November 17th.

1. Report of Case of Fracture of the Carpal Cuneiform.

2. Gastrointestinal Diagnosis. Illustrated by 40 Consecutive Operative Cases (April-October, 1914). C. W. Lippman. Discussed by W. C. Alvarez.

3. Personal Results with Anoci Association. W. I. Terry. Discussed by F. D. Tait, F. Williams, H. A. L. Ryfkogel, S. Hyman and A. Newman.

4. Morphin-Scopolamin Anesthesia in Obstetrics. L. I. Breitstein. Discussed by W. F. B. Wakefield, B. F. Sandow, W. E. Libby and A. Newman.

Eye, Ear, Nose and Throat Section. Tuesday, November 24th.

1. Presentation of Cases:

(a) Meniere's Symptom Complex, begin-

ning twelve years ago, with neuritis of cochlear branch of eighth nerve. H. McNaught.

(b) Three cases of Glaucoma upon which the Elliott operation had been performed.

Two albino children, whose parents were both dark, but the great-grandfather on paternal side was an albino. Hans Barkan.

2. Glaucoma: Some of its Diagnostic and Operative Problems. Hans Barkan. Discussed by K. Pischel, V. H. Hulen, M. W. Fredrick, L. S. Green, P. Dolman and J. J. Hogan.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. W. J. Backus, Friday evening, November 27th, President J. D. Dameron in the chair. The following members were present: Drs. H. C. Peterson, B. J. Powell, J. T. Davison, C. R. Harry, Margaret Smyth, L. Dozier, C. F. English, G. W. Walker, D. R. Powell, E. A. Arthur, J. D. Dameron and R. T. McGurk, with Dr. C. C. Crane of San Francisco as guest.

The minutes of the last meeting were read and approved. A favorable report from the Committee on Admissions was received on the application of Dr. Bolinger and he was declared a member of the society. The committee appointed to make the campaign against Amendment No. 46 made its report, and the same was accepted and the committee discharged with thanks. Nominations were made for the Board of Directors and various committees, which are to be elected at the December meeting.

The routine business having been completed the president called upon Dr. Dozier of the Program Committee to introduce Dr. C. C. Crane. The subject of his paper was "A Consideration of Some of the Conditions of the Feet Called 'Rheumatism.'" Dr. Crane's paper was one of the most practical which the society has yet heard. The doctor illustrated his remarks by practical demonstrations on plaster of paris casts. He showed spurs removed from the Os calcis which had been the cause of much pain and in which the erroneous diagnosis of rheumatism of the feet had been given. The doctor also exhibited several samples of poorly constructed shoes, contrasting them with some others which, though less stylish, were mighty comfortable for aching feet. The point was strongly emphasized that practitioners should give more attention to the details of aching pains of the feet and be less prone to pass them up as rheumatism. The value of X-ray pictures as an aid to diagnosis of beginning flat foot, osseous deformities, etc., was spoken of. Dr. Crane concluded his paper by giving a few case reports in which the value of careful treatment had shown its effects. The paper was discussed briefly by Drs. Dameron, Walker, Arthur and Dozier. At the conclusion of the paper refreshments were served.

R. T. McGURK, Secretary.

TULARE COUNTY.

At the regular monthly meeting of the Tulare County Medical Society held December 1st, the following officers were elected for 1915:

President, J. Tracy Melvin, Porterville; vice-president, A. N. Loper, Dinuba; secretary-treasurer, A. W. Preston, Visalia; board of censors, R. N. Fuller, Tulare; delegate 1915-1916, G. M. White, Visalia; alternate, T. D. Blodgett, Tulare.

ADDISON W. PRESTON, Secretary.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

DECEMBER MEETING OF THE WASHOE COUNTY MEDICAL SOCIETY.

Reno, Nevada, Dec. 1, 1914.

Dr. P. J. Mangan of Winnemucca presented a case of Acromegaly. The patient was a married woman, age 27. His paper in connection was well written and proved interesting.

Messrs. Hal Leman and J. J. Mullen, members of the Nevada State Industrial Commission, were present by invitation. Various phases of the Industrial Law and its workings were discussed, the result being a much better feeling toward the law on the part of our members.

Attention was called to the fact that after January 1, 1915, certain changes would probably be made in the State Board of Health, and the Board of Medical Examination and Registration. A motion was made and carried that immediately after our adjournment, Dr. Mangan, who is president of the State Association, call a special meeting for the purpose of adopting a resolution endorsing Dr. S. L. Lee, who has for many years served as secretary of both these boards; such resolution to be forwarded Governor-elect E. H. Boyle, with the request that if possible Dr. Lee be retained as secretary of such boards.

The following officers were elected for 1915: President, Henry Bergstein; vice-president, Raymond St. Clair; secretary-treasurer, W. L. Samuels; censor, three years, J. L. Robinson.

A smoker and "dutch lunch" followed the meeting.

W. L. SAMUELS,
Secretary-Treasurer.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Prescription Writing from the Pharmacist's Viewpoint.—Some months ago Dr. Bernard Fantus sent to leading pharmacists throughout the United States question blanks requesting reports on one hundred consecutive prescriptions taken at random from the pharmacists' files. His report, presented at the second annual session of the Federation of State Medical Boards of the United States, covers a review of ten thousand prescriptions. The following tabulation shows the percentages obtained on the various questions submitted:

Report on the examination of 10,000 consecutive prescriptions:

a. Written in English.....36%
b. Use of poor Latin.....18%
c. Almost illegible 4%
d. Use of metric system.....a small percentage
e. Number of ingredients—
   1. Less than three.....46%
   2. More than five.....11%
f. Proprietaries 24%
g. Specified preparations 11%
h. Incompatibilities 2%
i. Over-doses and errors.....1%
j. Has the quality of prescription-writing improved or deteriorated within the last ten years? Improvement reported by....55%
   In what respects? More U. S. P. and N. F. preparations used. Deterioration reported by 20%
k. Other remarks: "Doctors have an insufficient knowledge of pharmacy and prescription writing" reported by quite a number.

"The first point shown by this investigation is that over one-third of all prescriptions are written in English; and that almost one-fifth are written in poor Latin. In view of the fact that, no doubt, all medical students are taught to write prescriptions in Latin, it is evidently a rather poor result that less than one-half of the prescriptions written are in correct form. We note from the report that 4 per cent. of the prescriptions are 'almost illegible.' Of course there is no excuse for any of them being written so poorly; but, in view of the popular idea regarding the bad chirography of physicians in prescription writing, and the jokes leveled at the medical profession on account of this, the showing seems to me remarkably good. I am wondering, however, whether 4 per cent. of the checks on banks written by physicians would be reported upon as almost illegible.

"The metric system is not yet used to any extent in this country. This is unfortunate. The existence of the two systems of weights and measures side by side is surely an abomination. The use of one or the other must be discontinued; and the sooner this is done the better. Now which one shall it be? Science says the metric system is the only one fit to survive; it is chiefly the force of inertia that maintains the other. The medical students in the majority of our schools are embarrassed by being taught prescription writing in the metric system in their courses in pharmacology, and by finding their clinical teachers in the practice of medicine and in the specialties still using the old system. Would it not be possible for our revered old medical teachers to adopt the new system, even at the expense of some vexation and exertion on their part, in order to spare the host of those entering the profession the difficulty and annoyance of learning both systems, and possibly mastering neither? I believe resolutions are in order among all the faculties of our medical schools, that henceforth only one system of weights and measures shall be used by all the members of the faculty and that this system shall be the metric system. I am wondering whether this great and powerful national body could do something to save our students the necessity of learning the use of two systems of weights and measures.

"Polypharmacy is defined as the prescribing of too many medicines, especially in one prescription. Surely more than five is too many. Our report shows that polypharmacy is still practiced to the extent of 11 per cent. On the other hand, we ought to congratulate ourselves upon the fact that almost one-half of all prescriptions written are comparatively simple in composition, containing less than three ingredients.

"We now come to perhaps the most significant portion of the report, namely, the extent to which proprietary medicines are prescribed. While I am not narrow enough to believe that proprietary medicines should never be prescribed, surely 24 per cent., the figure shown in the report, is too high to represent a desirable condition. It is somewhat of a disappointment after all that has been said and written against the use of proprietary medicines to discover that one prescription out of every four still calls for proprietaries. I find that pharmacists in general base their reply to the question whether prescription writing has improved or deteriorated, upon their experience in the use of proprietaries. Bearing in mind that most of these reports come from pharmacists, who have been prominent in the so-called 'U. S. P. and N. F. Propaganda,' and who probably have concentrated their propaganda upon the physicians whose prescriptions they receive, the figure in the report is probably too low to represent the condition existing in general. Proprietary medicines, I take it, owe their existence to a combination of factors, none of which is of credit to either medicine or pharmacy. No one will dispute the conclusion that, if pharmacology, using the term in the widest sense, were properly taught, the use of proprietary medicines would reach a very much lower percentage.

"The use of specified preparations denotes a lack of confidence in the pharmacist on the part of the prescribing physician. I am glad to note that it does not exceed 11 per cent.

"That incompatibilities do not exceed 2 per cent. is perhaps somewhat gratifying. Though overdoses and errors do not exceed 1 per cent. that number even is too great, considering the seriousness of the possible issue. It shows the advantage of the services of the pharmacist in safeguarding us and our patients against errors.

"On the question whether prescription writing has improved or deteriorated, my correspondents are divided. About 55 per cent. report improvement, mostly in respect to the prescribing of fewer proprietary medicines. Twenty per cent. report deterioration, and the balance of my correspondents do not commit themselves on this point. Quite a number, however, note, under 'other remarks,' that doctors have an insufficient knowledge of pharmacy and prescription writing. That this is quite a general opinion on the part of pharmacists may be judged from several papers that have been written on this subject within the last year.

"After all, however, pharmacists do not see our worst failures in the teaching of prescription writing. I am convinced that a certain proportion of our graduates, on entering practice and finding themselves incompetent to write prescriptions, solve their problem by not writing prescriptions at all,

dispensing their own remedies, with all the evil results of such practice.

"Summing up our findings, it becomes evident that there is need for considerable improvement in prescription writing. This could be secured if it were realized that prescription writing cannot be taught by lecturing or by demonstrations; that the students must be drilled in prescribing. I believe that the best results can be obtained, if a course on pharmacy and prescription writing be given before the work in pharmacology is taken up. The students should be made familiar, in this course, with the various classes of pharmaceutic preparations and their prescribing. Then, when the student enters his course in pharmacology, he is ready to write prescriptions from the very beginning; and he ought to be required to write prescriptions for each of the important drugs as they are studied, paying special attention to methods of pleasant and efficient administration. When the student finally advances to the study of therapeutics he should be required to write prescriptions from the standpoint of the effect. Finally, if the clinical instructors would do their duty and require the students to write prescriptions for the remedies needed by the patients treated in the hospitals and in the dispensary, our students would leave our medical colleges well trained in prescribing.

"There are two ways in which state medical examining boards could bring about improvement in prescription writing. First, by restricting their examinations to the List of Useful Drugs, published by the American Medical Association, or, if this list does not suit them, to any other list they may choose, and by publishing this list so that teachers in this branch may be able to concentrate their students' energies upon the really useful and important drugs. With the limited time at our command, we can only do one of two things, either give our students a superficial and therefore useless knowledge of a large number of drugs, or a thorough acquaintance with a relatively small number. Surely the latter would be much the more profitable course; this we would pursue, if the state boards would help us by giving us a list of drugs to which they would confine the examinations. Secondly, by requiring candidates to write actual prescriptions in the examinations. This would serve as a wonderful stimulus to teachers and students alike to perfect themselves in the art."

Since the publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Slee's Normal Horse Serum.—Marketed in vials containing 100 Cc. Abbott Alkaloidal Company, Chicago.

Diphtheria Antitoxin.—Marketed in packages of 10,000 units ready for use. Memorial Institute for Infectious Diseases, Chicago.

Concentrated Diphtheria Antitoxin.—Marketed in syringe packages containing from 500 to 7500 units. F. Stearns & Co., Detroit, Mich.

Bacillus Coli Communis Vaccine.—Marketed in boxes of 6 ampoules. E. R. Squibb & Sons, New York City.

Staphylo-Acne Vaccine.—Marketed in boxes of 6 ampoules. E. R. Squibb & Sons, New York City (Jour. A. M. A., Nov. 14, 1914, p. 1763).

Pyocyaneus Vaccine.—Marketed in boxes of 6 ampoules. E. R. Squibb & Sons, New York City.

Streptococcus Vaccine.—Marketed in boxes of 6 ampoules. E. R. Squibb & Sons, New York City.

Friable Tablets of Emetine Hydrochloride, Mulford.—Each tablet contains emetine hydrochloride 0.032 Gm. H. K. Mulford Co., Philadelphia, Pa.

Antirabic Vaccine.—Consisting of eighteen doses, one dose is sent by mail daily. Pasteur Institute of St. Louis, St. Louis, Mo.

Typhoid Vaccine, Immunizing.—Marketed in packages of three syringes and in packages of three ampoules. H. M. Alexander & Co., Marietta, Pa. (Jour. A. M. A., Nov. 28, 1914, p. 1953).

The Action of Iodids on Blood Vessels and Heart.—The iodids, especially potassium iodid, have been credited with having a blood-pressure lowering action and have been used extensively in the treatment of arteriosclerosis. D. I. Macht has demonstrated that the iodid ion, instead of depressing the heart and vessels, has a marked stimulating action and that if potassium iodid lowers blood-pressure it must be the effect of the potassium part of the compound (Jour. A. M. A., Nov. 14, 1914, p. 1767).

Radium Emanation Activators.—Outfits for charging drinking water with radium emanation are now widely and extravagantly exploited. For an apparatus which imparts 2500 Mache units to water each day as much as $200 is asked. Theoretically, 72 cents worth of radium can produce 2500 Mache units of emanation per day. Even if, because of mechanical difficulties 20 times as much radium were required to be present in the activator, the cost of the radium in this $200 apparatus would be only $14.40 (Jour. A. M. A., Nov. 14, 1914, p. 1780).

Sherman's Non-Virulent Tubercle Vaccine.—This product of G. H. Sherman, Detroit, was refused recognition by the Council on Pharmacy and Chemistry because the far-reaching claims made for it were not substantiated by suitable evidence (Jour. A. M. A., Nov. 21, 1914, p. 1870).

Narcophin.—Narcophin consists of morphine meconate and narcotine meconate in molecular proportions. It is claimed to be a scientific substitute for opium and to have advantages over morphine. The Council on Pharmacy and Chemistry was unable to accept the therapeutic claims made for it (Jour. A. M. A., Nov. 21, 1914, p. 1872).

The Friedmann Treatment.—An investigation made by the U. S. Public Health Service of the validity of the claims made for the Friedmann treatment of tuberculosis is a complete refutation of Dr. Friedmann's claims, not only as to having developed a specific cure for tuberculosis but also as regards the harmlessness of the treatment. The report of the investigation shows the flimsy evidence on which the Friedmann method for the treatment of tuberculosis was based (Jour. A. M. A., Nov. 7, 1914, pp. 1673 and 1690).

Agar-lac.—Agar-lac, sold by E. Fougera & Co., is stated to be composed of "Agar-Agar with Lactic Ferments Grs. 4½, Phenolphthalein Grs. ½." Regarding the "lactic ferment," the expert of the Council on Pharmacy and Chemistry reported that Bacillus bulgaricus were present in small numbers only and that there were at least two other bacteria present. The Council refused recognition to Agar-lac because its composition is not correctly declared, because it is exploited in a way to cause laymen to use it to their detriment, because unwarranted therapeutic claims are made for it, because its name does not indicate the most potent constituent, phenolphthalein, and because the use of a ready-made combination of cathartic drugs with lactic acid ferments is unscientific (Jour. A. M. A., Nov. 14, 1914, p. 1777).

Asepticones.—Asepticones, sold by the Chinosol Company, are vaginal suppositories stated to con-

tain salicylic acid, boric acid, quinine and chinosol. On the basis of the evidence submitted the Council on Pharmacy and Chemistry voted that Asepticones be refused recognition because unwarranted and misleading therapeutic claims are made; because the name does not indicate the potent constituents and because it was considered an unscientific shot-gun mixture (Jour. A. M. A., Nov. 14, 1914, p. 1778).

Iodia.—Iodia (Battle & Co.) is claimed to contain potassium iodid in combination with iron phosphate and vegetable "principles." It is extravagantly recommended for use in many and varied conditions. It is asserted to be "almost a specific" in eczema and rheumatism and "a highly efficient form of iodine." The A. M. A. Chemical Laboratory having shown that untrue statements in regard to the composition and preparation are being made, the Council on Pharmacy and Chemistry refused recognition to Iodia on this account: because unwarranted therapeutic claims were made and because the use of this complex mixture is unscientific and a detriment to the profession and the public (Jour. A. M. A., Nov. 21, 1914, p. 1871).

BOOK REVIEWS

Gynecology. The Practical Medical Series. Volume IV. Edited by Emilius M. Dudley, A.M., M.D., and Herbert M. Stowe, M.D. Series 1914. Price, $1.35.

This book is of value chiefly as a guide to the literature published on gynecology during the past year. Doctors Dudley and Stowe have very ably edited this book, which is composed of a résumé of the leading articles on gynecology published in the foreign and American journals of 1913. One can, with this little book, very quickly review the literature of the past year, and the name of the author, journal and date of original article is given of each monograph, so that the reader can consult the original article on any particular gynecological subject in whch he may be interested. The abstracts are brief but contain all the pertinent matter of the original article and at the end of many of the abstracts the editors have added in parenthesis a few lines regarding their own ideas on the subject. The book is divided into seven parts.

Part I is on general principles dealing with physiology, anesthesia, organotherapy and operative technic.

Part II is on menstrual disorders and takes up the physiology and pathological conditions.

Part III deals with uterine displacements and injuries, and contains articles on flexions and versions, prolapse, inversion, genital hernia and transnatism.

Part IV is on infections and allied disorders.

Part V is on extra-uterine pregnancy.

Part VI deals with tumors—genital, uterine, ovarian and tubal and numerous articles are abstracted on the X-ray, radium and allied treatment of tumors.

Part VII is on sterility, and concludes the book. This book can be very useful as a guide when used in conjunction with the original articles which are abstracted therein. F. R. G.

Chemistry for Nurses. By Reuben Ottenberg, A.M., M.D. Published by The Macmillan Co., New York. 1914. Price, $1.00.

A charming, intimate little volume that, while it may not serve to make chemists of nurses, will at least rob chemistry of most of its mystery, and enable the readers to comprehend the lectures delivered on this subject. G. H. T.

A Text-Book of the Diseases of the Nose and Throat. By Jonathan Wright, M. D., Director of the Department of the Laboratories, New York Post-Graduate Medical School and Hospital, and Harmon Smith, M. D., Surgeon to Throat Department of the Manhattan Eye, Ear, Nose and Throat Hospital; Clinical Professor of Laryngology and Rhinology, Cornell University Medical School. Octavo, 683 pages, with 313 engravings and 14 plates. Cloth, $5, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

Jonathan Wright is the one man in America who has devoted practically all of his best years to a study of the pathology of the diseases of the nose and throat. Harmon Smith is a well known teacher and clinician along the same lines. These two authors have together produced a work, which will long remain a classic in this subject. Never has it been the duty of the present reviewer to read a book with more pleasure or delight. The inimitable style of Wright, when he discusses the pathology of the common cold, is more like a charming little essay than a dry statement of medical facts. The authors modestly affirm that they have laid emphasis upon the etiology and pathology of nose and throat diseases, but as a matter of fact, this part of the work is a long series of original observations and studies which have never before appeared in English, and certainly nothing of the sort is to be found in the foreign literature.

Colds have been the basis of more empirical treatment than any other trouble which afflicts mankind, but here the subject is covered by carefully worked out pathological studies, by microscopical examinations of the nasal tissues, and a rational therapy suggested. "The pathology of coryza presents the greatest interest from a point of view which regards it as a process of abdominal bio-mechanism,—not as a lesion, but as a change in metabolism. As a cold relieves itself by exudative processes, this physiological action should be aided by whatever artificial means are at command. In nature's attempts at a cure, without committing ourselves to former conventional ideas in regard to inflammation, we may look upon the hyperemia as supplying serous and corpuscular elements to remove soluble and insoluble protein offending material which has appeared in the tissues in their reaction to disturbances, with the exact nature of which we are unacquainted. It is unreasonable in theory and unwise from the practical standpoint of experience to use cocain and adrenalin, which interfere with this method of nature."

One of the most important chapters in the book deals with the etiology of accessory sinus disease. After a most painstaking study of the pathology of the mucous membranes of sinuses, Wright makes this statement which is characteristic of the original way in which these subjects are handled: "We bring in these considerations here to emphasize the point that the health of the maxillary sinus is impaired just in proportion to the extent that the cilia with which the epithelial cells of its surface are supplied have lost their efficiency. It is important to keep in mind this point in the etiology of sinus disease. So long as the natural passages are unobstructed, so long as disease has not abolished or temporarily restrained the action of the cilia, the accessory nasal sinuses will remain healthy. On the extent to which these con-

ditions can be restored will depend the prognosis."

This view based on a solid pathological foundation, and not, as is so often the case in rhinological work, on observational empiricism, carries with it as a corollary the important fact which is now interesting the sinusologist, that after opening the maxillary or even the frontal sinus, we should spare the diseased mucous membranes, and allow nature to restore them to their original integrity.

The chapter on vasomotor rhinitis, brings to light the fact that even that slight, but very disturbing condition has received careful consideration. "Overwork, frequent fatigue, and worry very often play an important role in the etiology of the nasal affections of these neurotic individuals; but neurotic individuals living in idleness, especially women, once started on the evil path to the doctor's office, become pests or victims. . . . It is a rare thing, though it occasionally happens, that a nasal operation has a favorable effect in a general way on these patients. Sometimes the nasal operator is hailed as a Special Providence, but usually he is forgotten in the interest excited by the specialist for another organ."

The chapter on the "Function of the Tonsils" has removed the teleological significance inherent in that term, to the realm of biophysical and biochemical processes.

"We have every clinical reason to believe that pathogenic bacteria find entrance to the general lymphatic system and blood-vessels through the tonsils as portals of entry. It has been shown that the external surface of all cell membranes is covered by a labile lipoproteid coating which acts as a semipermeable membrane and which apparently regulates, by its physiochemical reaction toward its environment, the endosmosis and exosmosis of the cell. There are also reasons for believing that it is by virtue of this varying external lipoid coating of the cell and of the lymph-space walls that a physical reaction, probably of surface tension variation, is set up between the wandering cells and lymph-space wall. Thereby the cell creeps along the space to its destination, the surface or the blood vessels, or wanders through the meshes of the lymph spaces. When by phagocytosis the foreign body is covered by the hull of its devouring cell it obeys, in its peregrinations, the law of surface tension existing at the surface of the host. It seems likely that this surface tension may also be influenced in the case of a carmine granule not only by being engulfed in the protoplasm of the cell, but it may acquire a lipoproteid covering from the fluids of the lymph spaces independent of the cell. Evidently then its destiny, its destination, will depend on the relation its surface bears to the surface coating of the lymph spaces."

To stimulate one's appetite by selecting attractive and original tidbits here and there is unfair to the rest of the book, which is full of meat from cover to cover. Every drawing is original, the text work is perfect, there are no typographical errors. Our ex-President's favorite expression, "bully," fits the book exactly. H. H.

LIP READING FOR THE DEAF.

To the State Journal of Medicine:

You may care to insert in your columns a notice to the effect that a class in Lip Reading for the hard of hearing is being conducted by Mrs. J. E. Trask, on Mondays and Fridays at 2:00 p. m., in connection with the Ear Clinic of the Stanford University Medical School. Mrs. Trask would be glad to add to her class those recommended by physicians or clinics. Very truly yours,

R. L. WILBUR.

WAR TAX.

Office of Collector of Internal Revenue, First District of California.

San Francisco, Cal., Nov. 20, 1914.

To all Concerned:

The following stamp taxes are in effect on and after December 1, 1914, to continue until January 1, 1916. These documentary stamps may be procured at the office of the Collector of Internal Revenue in San Francisco or at the stamp offices located in Oakland, Sacramento and Fresno:

Schedule A.—Documentary.

Bonds, debentures, or certificates of indebtedness of any association, company, or corporation, on each $100 of face value or fraction thereof	$0.05
On each original issue of certificates of stock, whether on organization or reorganization, on each $100 of face value or fraction thereof	.05
On all sales, agreements to sell, memoranda of sales, deliveries or transfers of shares, or certificates of stock of any association or corporation, on each $100 of face value or fraction thereof	.02
Upon each sale, agreement to sell, or agreement of sale of any products or merchandise at any exchange or board of trade, or other similar place, either for present or future delivery, for each $100 in value of said sale	.01
And for each $100 or fraction thereof in excess of $100	.01
Promissory notes, and for each renewal, for asum not exceeding $100	.02
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Bills of lading, manifests, etc., issued by express companies or public carriers, etc.	.01
Bonds, except those required in legal proceedings	.50
Certificates of profits or certificates or memoranda showing interest in the property or accumulations of any association, company, or corporation, and all transfers thereof, on each $100 of face value or fraction thereof	.02
Certificate of damage or otherwise and all other certificates or documents issued by port warden or marine surveyor	.25
Certificates of any description required by law, not otherwise specified	.10
Contract: Broker's note, or memorandum of sale of goods or merchandise, stocks, bonds, exchange, notes of hand, real estate, or property of any kind, issued by brokers, etc., for each note or memorandum of sale not otherwise provided for in act	.10
Conveyance: Deed, instrument, or writing conveying lands, tenements, or other realty, etc., value over $100 and not exceeding $500	.50
For each additional $500 or fraction thereof	.50
Entry of goods, wares, or merchandise in custom-house, not exceeding $100 in value	.25
Exceeding $100 and not exceeding $500	.50
Exceeding $500 in value	1.00

Entry for withdrawal of goods or merchandise from customs bonded warehouse.....	.50
Insurance, marine, inland, and fire (except purely co-operative or mutual), lightning or other peril on each policy, or renewal on amount of premium charged on each $1 or fractional part.....	.00½
Insurance, fidelity, and guarantee on each policy, on each $1 or fractional part thereof premium received.....	.00½
Passage tickets by any vessel from the United States to a foreign port, costing not exceeding $30 (tickets costing $10 or less exempt).....	1.00
More than $30 and not exceeding $60.....	3.00
More than $60.....	5.00
Power of attorney or proxy for voting at an election of officers of any incorporated company or association, except religious, charitable, literary societies, or public cemeteries	.10
Power of attorney to sell or convey real estate or to rent or lease the same, to collector or receive rent, to sell or transfer stocks, bonds, etc.....	.25
(Papers nsed in the collection of pension, back pay, or bounty claims, or claims for property lost in military or naval service are excmpt.)	
Protest: Upon the protest of every note, bill of exchange, acceptance, check, or draft, or any marine protest.....	.25
Telegraph and telephone messages: Every person, firm, or corporation operating any telegraph or telephone line or lines is required to make a sworn statement to the collector of the number of messages or conversations transmitted over their lines during preceding month for which a charge of 15 cents or morc was imposed, and for each such messages or conversations to pay a tax of.....	.01
On seats in palace or parlor cars and berths in sleeping cars (to be paid by the company selling the same).....	.01

Respectfully,
JOS9PH J. SCOTT, Collector.

TUBERCULOSIS AND RED CROSS STAMPS.

In the midst of appeals for aid to European war sufferers the California State Association for the Study and Prevention of Tuberculosis is launching its annual campaign for the sale of Red Cross seals. The money realized from the sale of these seals is devoted largely to the relief of California workmen and their families who may be afflicted with tuberculosis.

Many of our hard-working, respectable people have been brought to the doors of the county hospital just through the ravages of tuberculosis. The funds secured from the annual sale of the Red Cross seals has provided care for hundreds of cases of tuberculosis right here at home. There is no disease more prevalent in California than tuberculosis, and there is no disease that makes a greater, long-continued drain upon the finances of a worker's family.

There was a workman in one of the smaller towns of California who was recently told by his physician that he must go to an institution caring for tuberculosis, as he had developed the disease. He tried, but in vain, to find a place where he might secure treatment according to his small means. He kept on with his work, grew worse, the disease passing from the early stages until he found himself unable to work and a burden upon his small family. His wife cared for him night and day, lost her health and also developed symptoms of the disease. The husband died. The mother, weary and ill, struggled to support the three small children who were left fatherless. She became worse and finally died, leaving three orphans for the community and state to care for.

If there had been funds available for the father when his case was first discovered, this family tragedy would never have been written. The money derived from the sale of Red Cross seals has furnished treatment for many deserving men and women of the state. Stenographers, telephone operators, printers, carpenters, electricians and many other workers at indoor trades have been cared for by means of the funds provided through the sale of these seals.

About three thousand persons following gainful occupations in California died of tuberculosis last year. These deaths represented all sorts of occupations, but most of them occurred among those who follow indoor occupations. Clerks, stenographers, bookkeepers, barbers, factory workers, painters, plumbers, machinists and many others suffered greatly from the heavy toll exacted by tuberculosis. The annual wage loss in California because of the ravages of this disease amounts to about three million dollars.

Yet, in the face of these facts, Californians are called upon to aid sufferers from the European war. Workmen in California today are suffering and their families are starving because of tuberculosis. The State Association for the Study and Prevention of Tuberculosis appeals to every citizen in California to aid in the sale of the Red Cross seals in order that the deserving tuberculosis workmen of California and their families may be given the aid that they have earned and justly deserve.

The Red Cross seals will be on sale in nearly every town of California within the next few days. They may be placed upon Christmas packages and holiday gifts. Letters may be sealed with them but they must not be placed upon the face of the envelope, as that is contrary to the postal regulations. Many business firms place a seal upon each package of merchandise leaving their places of business. These are only a few of the uses to which the seals may be put.

NEW MEMBERS.

Peppers, Chas. H., Los Angeles.
Galbraith, G. H., Long Beach.
Binford, Nellie, Los Angeles.
Nelson, Chas. F., Los Angeles.
Furness, Gilbert B., Ocean Park.
Conroy, C. P., Venice.
Bolinger, Hugh J., Stockton.
Gardner, F. M., Redlands.
Sandow, B. F., Oakland.
Barkan, Hans, San Francisco.
Dixon, Howard B., Santa Cruz.
Curtiss, W. H., San Diego.
Dowdle, Edward Everett, Oakland.
Hund, Erwin John, Ross Valley.
De Puy, C. A., Oakland.

DEATHS.

Colburn, John R., Los Angeles.
Oliver, A. S., San Jose.
Murphy, Wm. J., San Bernardino.

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII FEBRUARY, 1915 No. 2

EDITORIAL NOTES

WARNING!
New Law; Heavy Penalties!

The Harrison Bill regulating the sale of habit-forming drugs was passed by the last Congress and becomes a law of the United States on March 1st, 1915. This is a Federal law and affects every person in the United States who has occasion to buy, sell, dispense, give away, use or have in his possession any of the habit-forming derivatives of opium or cocoa. Every physician in practice makes use of such drugs more or less often; after March 1st he cannot do so lawfully unless he has taken out the Government license to be had by application to the Collector of Internal Revenue of the district in which he lives. The penalties for violation of this law are heavy fine or imprisonment or both. And the law applies to you; to every physician in the United States; do not forget that! Do not think there is any way of avoiding it or that it does not apply to you personally. You must comply with it or get into trouble. The license fee is small—only $1.00 per year—but it must be taken out each year and the fact that you hold a license must be of record in the Collector's office.

Why were we not advised of this before? The good Lord, in His inscrutable wisdom, only knows the vagaries and stupidities of some of our high-priced Federal department chiefs. Doubtless some fat-head chief in some office having the administration of this law in charge, assumed that all physicians, pharmacists, dentists, etc., were natural-born mindreaders. When the mails are to be weighed for fixing railroad mail contracts, tons of seeds, agricultural reports, etc., are sent free of postage. When something important like this comes along, our poor, starving Government cannot afford to send a circular letter of information to the professional gentlemen most interested.

A large number of preparations commonly prescribed contain some one or more of these derivatives and they cannot be dispensed except in the way provided in this law. The list made up by one manufacturing house fills some six or eight closely printed pages. Obviously, there will be more or less friction for some months to come, for unless you have your Federal license, the druggist cannot fill your prescription for a cough mixture or similar preparation that may contain a small amount of one of these drugs, without subjecting himself to the possible penalties of the law.

Be on the safe side; take out your license before March 1st.

Apply to Collector of Internal Revenue—district in which you live.

DUES! DUES! DUES!

Be sure to pay your dues to your county medical society *before* March 1st. It is a very important matter and no longer a mere trivial detail. To administer the business attached to the legal department of the State Society and to safeguard the rights of over 2,500 individual physicians who are members, is no small thing and it must be done on a business basis. For this reason the House of Delegates, and the Council under them and carrying out the instructions of the House, have made certain definite rules for the conduct of the work and the conduct of the members. One of these rules is that all dues must be paid before March 1st or the medical defense provided by the State Society is lost from the 1st of January to such time as the amount is paid. All memberships terminate automatically on December 31st, but all who were members at that time are carried as such up to noon of March 1st, at which time they are automatically stricken from the roster as from the 1st of January. The $6.00 assessment is a very small matter in comparison with the hundreds, and in some cases thousands of dollars which it costs to defend a suit for alleged malpractice. And you never can tell whether or when you will be sued. In nearly every case of such suit, the doctor writes or says: "I had no idea of this! I never was sued before!" There always has to be a first time for anything and you never can tell whether the lightning will strike you next, or someone else. If your dues are paid to your county secretary before March 1st, and you have a receipt or a cancelled check to show for it, you need not worry about the rest; you will be protected. But remember, in all fracture cases, take an X-ray *plate* of the broken bone or bones and keep the plate; do not give it to the patient to keep as a souvenir! Be sure your dues are paid!

"RECIPROCITY" AGAIN.

The following letter has been received from the Secretary of the State Board of Medical Examiners, and is more or less self-explanatory. In presenting this letter, and in discussing its statements, let it be well understood that this JOURNAL has no quarrel with the board as a board nor with the members thereof as individuals. Probably, they are trying to do the best they can with the crazy-quilt document called the Medical Practice Act, but we have ample evidence in the office of the State Society that a considerable number of queer things have happened in the way of licenses to applicants who had previously been rejected.

Here follows Dr. Pinkham's letter:

Sacramento, Cal., January 7th, 1915.

Editor California State Journal of Medicine,
Butler Building, City.

Dear Doctor:—

On page 3 at the top of column one, there appears in the January issue of the California Journal of Medicine an article headed "one-sided reciprocity" which is not a clear statement of facts relative to the reciprocity feature in the present Medical Practice Act.

This office stated in the bulletin issued in October, 1914, a copy of which was mailed to every physician registered in the State of California whose address was known, that twenty-three states now accepted California licentiates under certain conditions, and since that date, two additional states have acknowledged their willingness to grant reciprocity as above stated.

This office trusts that the matter may be corrected in the next issue of the Journal, in order that the medical profession of the State of California may not be incorrectly advised relative to the operation of the present law.

Thanking you for your attention to this matter, I am,

Respectfully yours,

C. B. Pinkham,
Secretary.

In the first place, there is no real "reciprocity"; if memory serves, the word occurs only once in the law and then, apparently, inadvertently. Moreover, the law expressly provides that this state shall not enter into any contract in regard to standards or requirements, with any other state. Why was this put in? Could it have been to keep standards as low as possible? Now let us refer to the document mentioned by Dr. Pinkham, the *Quarterly Bulletin* of the Board of Medical Examiners. At page 18 we find the only matter relative to "reciprocity" as follows:

"The following state boards have replied to communication relative to reciprocity, stating conditions under which applicants of California licentiates would be accepted:"

Then follows a tabulated list of the states from which we learn that 23 were "Favorable" (whatever that may really mean), "Definite reply deferred until board meets, 8; Will not accept California certificate, 12; Only accept provided a signed contract is executed, 4; No replies received, 3." As there can be no signed contract, we may say that 16 states flatly refuse to play with us and 3 will not even condescend to answer the letter sent to them. What are the terms and conditions under which these 23 "favorable" states will accept our applicants? The *Bulletin* nowhere states nor can they be ascertained as one is told that each case is considered on its own merits! Furthermore, it is interesting to note that Arizona is one of the states that is in the refused column; but our board has licensed without examination, on the "reciprocity" basis, over twenty Arizona licentiates, some of them having obtained the Arizona license solely for the purpose of registration in California without examination. Assuredly the designation "One-sided reciprocity" seems to be not at all inadequate, in view of the facts. Up to the present time, so far as we can ascertain, no applicant with a California license has been licensed by this so-called "reciprocity" in any other state or territory. The dictionary nearest at hand gives the following definition of "reciprocity": "Mutual or interchangeable action; Equality of commercial privileges."

LEGISLATION.

It is impossible to guess, at the time of writing, what will come out of the law factory now working at Sacramento. As the governor omitted from his message any request in regard to medical matters, there was not the flood of medical bills that was so remarkable a feature of the last legislature. The drugless practitioners were active in Sacramento in December and of course they want a special board of examiners and have innumerable blow-holes and jokers in their proposed measure. It is doubtful, however, that either the legislature or the governor will look favorably upon any new boards of examiners. The attorney for the board has prepared, and the secretary of the board has sent out, a list of amendments to the present act which have been suggested; the attorney specifically states that he does not approve all of them, and this is gratifying, for some of them are absurd and some are vicious. About the worst of the lot is a proposed amendment extending license without examination—the so-called "reciprocity"—to holders of a license to practice any form or method of treating the sick or afflicted; in other words, to let in a large number of osteopaths, chiropractors, etc.; the drugless horde. Another is the inclusion of chiropodists, their examination and license by the State Board of Medical Examiners! Another provides a monthly license fee of $100.00 for itinerant practitioners of any cult. Another makes six instead of seven votes necessary to pass any measure, which is bad, for there cannot be too much protection. Of course there is to be a decrease in the minimum requirements, but this is of minor significance as a given number of required hours printed

on a piece of paper does not make a medical school or mean much of anything. The recommendation in regard to license without examination of all classes—drugless healers—the so-called "reciprocity," is made in the face of a decision of the Appellate court sustaining the constitutionality of the "reciprocity" feature of the law as it is. It is proposed to move the office from Sacramento to San Francisco; it was absurd to put it in Sacramento at all. It is also proposed to make many minor changes to make the act correspond with the major ones. It will be interesting to see what sort of a jumble will come out of the mill.

MR. KAUFMAN.

Our chief counsel, Mr. Walter W. Kaufman, has turned in a very exhaustive report of the last year's work in our Medical Defense. It is too comprehensive to publish in full but a digest of it, and of Mr. Morrow's report, will appear later. In the meantime it is a pleasure to record the fact that Mr. Kaufman has so carefully and so successfully guided our legal work and to thank him for his untiring efforts.

MEDICAL DEFENSE RESULTS.

In the annual report of our attorney for Southern California, Mr. H. T. Morrow, who has handled our work from the first with remarkable sagacity and ability, and to whom we are glad thus publicly to extend our thanks, there are one or two paragraphs of general interest.

"The Society has been especially fortunate this year in having several cases which would have been expensive to try, disposed of without trial. While the trial work this year has been extremely light, I anticipate that next year will not show any extraordinary increase in suits filed or cases tried. The advice which has been given by the Secretary of the State Medical Society from time to time with regard to the advisability of taking X-rays in all fracture cases, and elsewhere when necessary, has directly resulted in a large saving to the Society, for I have found in several cases under investigation this year, that the fact that the member in question had expressly adopted the suggestion of the Society and had excellent X-ray plates, resulted in certain malpractice matters in question being dropped without suit."

WARNING!

OF UTMOST IMPORTANCE!

Warning! On and after March first it will be unlawful for you to have in your possession any opium or cocoa leaves or any compound, manufacture, salt, derivative or preparation thereof (morphine, codeine, heroin, cocaine, etc.) unless you have registered with the Collector of Internal Revenue of your district and paid the annual tax of $1.00. This is a law of the United States Government and not a local or State law.

Without such registration, etc., you cannot dispense or distribute any of the aforesaid drugs in any manner or for any purpose.

Having registered and paid the tax, you may dispense any such drugs in the course of your professional practice only, provided you keep a record showing amount dispensed, date, name and address of patient; but such record will not be necessary if you personally attend upon the patient. Record must be kept for two years subject to inspection.

Unless you have registered and paid the tax, and write your prescriptions in conformity with the law and regulations, your druggist cannot dispense your prescriptions for such drugs.

BOUND TO PUBLISH IT.

After the outbreak of the great war now raging in Europe medical periodicals failed to arrive from abroad for a while. It was at first a question whether their publication had been suspended or whether obstacles to transportation prevented their arrival. In the course of time those who had enjoyed the respite from the obligation of keeping up with the age by reading the facts and fancies communicated in the journals sighed to discover that there had been only a damming up of the current and that even a total lack of readers would probably not suspend the animation of writers. And railways might be blocked and ships desert the sea, but until the very air evaporates and space itself is obliterated a determined contributor will find a way to get to his editor.

As witnesseth Doctor Ernest Jeger. He is rendering surgical aid to the forces occupying the fortress of Przemysl. Przemysl has been besieged by the Russians for several months. They have effectively blocked egress for the ordinary human body which is content, or forced, to remain in contact with the earth. But Dr. Jeger had a message for mankind on the subject of Sutures of Blood Vessels. His soaring spirit would not be baffled and, finding one who soared in body as well as in mind, to him he confided the MS, composed amidst the carnage, and directed it to the editor of a medical journal in Berlin. So by means of the aeroplane a paper on "Military Surgical Experiences on Suturing of Blood Vessels" got beyond the confines of the beleaguered fortress and reached its destination.

The editor of the Berliner Klinische Wochenschrift was evidently touched by the resolution which overcame such difficulty on the path to his columns and he yearned to equal his contributor's prowess by sending back the proofs by the aerial route. But he ruefully confessed that the aeroplane department maintained for the convenience of the editorial staff was not in working order, so that the winged words from Przemysl had to be printed without the author's revision.

Let all editors learn from this that when a medical chiel is takin' notes, faith he *will* print 'em.

DRUGGIST CO-OPERATION.

In a recent issue of the JOURNAL, we published a letter from Dr. Philip King Brown referring to the druggist situation and the relations of physician and druggist, that contained much good food for thought. The December number of the *Drug Clerk's Journal* reprints this, without comment, but in another portion of the same issue has an article entitled "Can the Pharmacist Prescribe?" which is merely silly and does not in any way discuss the question brought up. There should be more co-operation between physician and pharmacist and there should be some common ground on which both may meet and each be a help to the other; but we will never find it in the way pursued by the *Drug Clerk's Journal.*

REMARKS TO LEGISLATORS.

As is well known to those who have for any length of time watched the various legislatures of the State of California, the Southern California Delegation is a very important and influential element. They always meet in Los Angeles in December and listen to requests, petitions for bills, etc., from whomsoever wishes to appear and be heard by the caucus of the delegation. On December 18th, 1914, a committee of the Los Angeles County Medical Association appeared before the delegation and expressed the views of the medical society on medical legislation. The following remarks, which come from Dr. Francis M. Pottenger, are so sane and so adequate that it is a pleasure to quote them. The JOURNAL is not advised as to whether they have appeared in any other publication:

The members of the medical profession who are licensed to practice medicine and surgery in the State of California believe in high standards of qualifications for their profession, and look upon any attempt to lower the standard as inimical to the best interests of the citizens of the state.

Preliminary to our discussion we desire to call attention to the fact that the two fundamental principles in the treatment of disease are: first, accurate diagnosis, and, second, an efficient therapy. We further wish to emphasize the fact that the prevention of disease, which is the ultimate aim and purpose of medicine, likewise depends upon accurate diagnoses.

The diagnosis and treatment of disease today, on account of the rapid strides which are being made in our science, are demanding more and more preparation on the part of students in order that a satisfactory service may be rendered to those who are sick.

We believe that anyone who attempts to care for the sick, whether it be by medicine, surgery, manipulation, or any other measure, should have a thorough knowledge of the human body and its functions in health and disease, and be able to diagnose the condition which he attempts to treat. To this end we believe in a certain standard of preliminary education for all students of any branch of the healing art, as being not a guarantee, but an indication, that such students shall have the capabilities of grasping the problems which are associated with the diagnosis and treatment of disease. We believe that no such standard should be *lower* than that represented by a high school certificate.

We further believe that it takes as much training to understand the human body and to diagnose and differentiate between similar conditions when treated by so-called drugless methods, as it does when treated by medicine and surgery, and that the plea made by the followers of such methods that, inasmuch as they are not intending to use drugs and surgery they do not require an equal training in the knowledge of the human body and the diagnosis of disease is an admission that they do not appreciate the seriousness of their calling and the responsibility which is imposed upon them

when the health and lives of patients are placed in their hands.

Graduates in Medicine and Surgery are not necessarily drug doctors. They stand ready to use anything that will help to alleviate or cure the sick and anything that will prevent disease. Their knowledge of the human body, their skill in diagnosis, and their judgment of disease prompts them to study and apply so-called nature's remedies, when indicated. Open air, sun baths, various water baths, mechano-therapy, electricity, massage, mental therapeutics are all used by members of the regular profession. Their employment is based on the same knowledge of the human body and the same skill in diagnosis as the employment of drugs and surgery.

As practitioners of medicine and surgery we desire to make our attitude toward practitioners of other modes of healing clear. We are not unalterably opposed, as is so often said, to other modes of healing. We use many of them ourselves. We are, however, unalterably opposed to persons holding themselves out to the public, which is not in a position to discriminate, as practitioners of medicine when, on account of insufficient, or inefficient training, they do not understand the human body, either in health or disease, and are not able to diagnose the disease which they are attempting to treat. If the public demands practitioners of these modes of healing, let it have them; but first, let such practitioners prepare themselves by a sufficiently thorough course in the fundamentals of medicine so that they are capable of giving the services required. Such a knowledge of the human body is desired, such a familiarity with disease and such a skill in diagnosis is demanded that such a disease as appendicitis will not be treated by massage until an abscess forms and ruptures; so that such a lesion as tuberculosis of the joints will not be treated by manipulation, and so that broken bones will not be treated by mental therapy. Let all who desire to practice any form of healing prepare themselves by an efficient preliminary education, likewise a proficient professional training, so that they can make a proper diagnosis and so that they will know when their method is efficacious and when useless or harmful; and then let the layman choose whomsoever he wishes for his medical adviser.

THE RIGHT KIND OF TALK.

Elsewhere in this issue we take pleasure in printing an editorial from the *Fresno Republican* which has the right ring. It is "safe and sane" and the sort of thing that will do good. It is the kind of editorial statement so seldom found in newspapers now, but which made them the guides to public opinion a generation or more ago. If all the papers in the state would take this attitude and slowly but surely educate their readers in the line of the relative value of a "twisted thought" and a malaria infected mosquito, it would not be so many years till we had a pretty clean state and some pretty sane legislation. As usual, the *Fresno Republican* stands for the good of the people of the state and not for any selfish interests of its own.

MEMBERSHIP VS. LICENSE TO PRACTICE.

More and more it is becoming evident that membership in our county units, and therefore membership in the State Society and the American Medical Association which are included with membership in a county unit, must take the place, to a large extent, of the state license to practice medicine and surgery. In the eyes of the ordinary man in the street, one license looks just like another and a license to practice naturopathy or chiropractic or osteopathy seems no different, to him, than a license to practice medicine; the holders of all are alike treating sick people. The people have taken legislation into their own hands and apparently do not wish for any expert advice; it seems useless for us, as a medical organization, to try to tell them or the legislators anything. The spirit of the time is revolt against all control and they seem willing to allow anyone who wants to, to get a license to practice anything he wishes to. How useless would it be for a medical organization to say much when from the Board of Medical Examiners itself come suggestions to license chiropodists under that board and to extend the privilege of so-called "reciprocity" to all sorts of drugless healers who have been licensed in other states? It would be undignified of us even to seriously discuss such utter absurdities and if we officially oppose the recommendation of the board, then the cry goes up that there is a medical fight on and that the "medical trust" feels that its monopoly is being attacked! Truly, the people is a silly people.

SMOOTH SWINDLER; LOOK OUT FOR HIM.

There is a young man, described as about 21 years old, 6 feet tall weighing about 180 pounds, black hair, very dark, large eyes, rather pale, deep falsetto voice, three upper teeth missing (which may have been fixed), who is operating in California taking alleged subscriptions for *Current Opinion* and *The Literary Digest* and offering as a premium to doctors a medical book, and to lawyers a law book. The Periodical Publishers' Association have offered a reward for information that will lead to his arrest. Dr. English, of Stockton, is good enough to advise us of this man's presence and of the further fact that he is indeed a "smooth article," with a good talking knowledge of medical journals and up-to-date medical publications and also has in his possession any number of "credentials." He seems to be doing a good deal of business which is, of course, unauthorized and repudiated by the publications mentioned. This sort of crook is probably as old as the oldest subscription publication and he is always hard to catch. Be on your lookout for him and if he comes your way, notify the police department. In general, never subscribe for anything to an agent unless he is personally known to you, and never pay him any cash; send the money to the home address of the publication. If he is a legitimate agent, he will get his commission just the same and if he is not you will save your money.

ORIGINAL ARTICLES

OPERATIONS IN THE EYE CLINIC OF STANFORD UNIVERSITY.*

By ALBERT B. McKEE, M. D., San Francisco.

The operative material of the Ophthalmological Clinic of Stanford University affords an opportunity for the study of statistics which heretofore has not been utilized, but we hope in future, by maintaining more exact records, to render the material available.

The operative methods have usually been conservative in character, new methods having been tried only when dissatisfaction with old methods or the inherent saneness of the newer method rendered a change advisable. It has been our endeavor to give useful vision to the largest possible number of individuals rather than to introduce any element of hazard by attempting to procure more brilliant results in a few cases with perhaps a larger percentage of failures.

For several years past we have made preliminary iridectomies in all cataract cases when not compelled by circumstances to do the iridectomy at the time of the extraction. It has generally been admitted that this method is advisable when the patient has already suffered the loss of one eye, the inference being that the method is somewhat safer than others. If this be true, it seems illogical to deny to anyone this added element of safety, even though he have two eyes.

According to Dr. Shoemaker, the former editor of the *Annals of Ophthalmology*, this position, taken by one of the speakers at an assemblage of oculists, was so convincing that several converts were made.

The advantages of the operation are that the operator has an opportunity to become acquainted with the behavior of the patient as well as with conditions in the eye itself, tendency to hemorrhage, size of the nucleus, etc.

The slight pain of the iridectomy, which might cause some resistance or pressure on the part of the patient, is comparatively harmless before the removal of the lens; but if, as is sometimes the case, the patient is thereby unnerved, his subsequent behavior becomes a matter of grave concern. Hemorrhage from the iridectomy, which is very embarrassing when removing the lens, will have disappeared before the time for the extraction.

It is usually not difficult to control a patient during the short time occupied by either stage of the operation, but a combined extraction requiring the introduction of several different instruments, and causing repeated efforts at self-control, is much more trying to patient and operator.

In the comparatively small number of cases of combined extraction, the percentage of complications has been considerably higher than in those in which the preliminary iridectomy has been made.

So far as we have been able to discover, there was but one eye lost in 58 operations where preliminary iridectomies had been done, a suppurative choroiditis following a few days after a perfectly smooth extraction being responsible for that loss.

Three eyes were lost after combined extraction, the loss not being directly chargeable to the method, two having been infected upon the same day, owing perhaps to some contact with sources of infection in the sugical ward. One of these patients had already undergone operation upon the other eye with a perfectly successful outcome, but lack of time on the part of the patient compelled us to do the second extraction at the time of performing the iridectomy.

We have had the usual difficulty with secondary opacities and somewhat indifferent success in relieving them by subsequent discissions. The operation of Homer Smith, therefore, appeared worthy of trial but has not been made use of in a sufficient number of cases to demonstrate its true value.

In two patients upon whom this method was tried the cataracts were so mature that it is probable the extraction could quite as readily have been done by the usual methods. In one individual the usual operation was performed upon one eye and the preliminary capsulotomy preceded the operation upon the other eye. Although the cataracts were of the black or sclerotic type, the presence of some apparently clear cortex led to a trial of the capsulotomy. The extraction and the final result were not materially different in the two eyes.

In another patient, however, in whom we expected to find considerable debris, the extraction following capsulotomy was so clean and complete that we believed the operation to have been greatly improved by Smith's procedure. A disaster, the result of too vigorous use of the needle followed by rupture of the zonula and loss of vitreous, cooled our ardor somewhat but the operation is deserving of further trials.

Homer Smith claims especial value for the operation in facilitating the extraction of Morgagnian cataracts, the removal of the lens in high myopia, and the delivery of immature sticky cataracts.

In the few operations done by us, we allowed 24 to 48 hours to elapse between the capsulotomy and the extraction but Smith now advises six hours as sufficient to bring about the desired changes without incurring the danger of rise of tension.

He found no suitable knife in the shops but devised a modification of the Knapp knife-needle which cuts at all the various angles.

The action of the aqueous humor separates the lens fibres from the capsule. If the cortex is gelatinous in consistency, some of the material will protrude from the capsule; if of the Morgagnian type, the fluid mingles with the aqueous.

Notwithstanding the favorable reports from some operators concerning the extraction of the lens in its capsule, and even though a certain amount of vitreous may be lost without serious danger, an eye that is losing vitreous is an endangered eye and we cannot agree with the sentiment that disregards loss of vitreous, hence the intracapsular extraction is not adapted to general use even if it seem to be safe in certain hands, and a procedure

* Read before the Nevada State Medical Association, October 13, 1914.

such as that of Homer Smith is worthy of careful trial.

The Elliott Operation: Iridectomy will probably continue to be the operation of choice in acute glaucoma but it has proven far from satisfactory in the chronic forms of the disease, hence the hearty welcome with which other operative procedures have been received. Of all these newer methods, the Elliott operation finds greatest favor at present. It is comparatively simple to perform and the dangers and difficulties are much less than those of an iridectomy.

Meller reports 300 cases, in which he considered the results satisfactory. The best results were in those cases in which he was able to excise a portion of iris. He reports 20 cases lost through infection and cautions against buttonholing the flap.

Axenfeld thinks so highly of the Elliott operation that he fears that the reporting of these late infections may deter operators from using this method.

Meller has not found the Elliott operation of great value in relieving the symptoms in blind eyes but our somewhat limited experience does not confirm this opinion. For the first operations, eyes were selected which would ordinarily be considered hopeless. In none of these patients did enucleation become necessary and all were freed from pain. One patient, a victim of heart trouble, had a glaucoma that was secondary to an intraocular hemorrhage. Another patient, a young woman who had sustained an injury to the eye many years prior, was suffering greatly from pain, the eyeball was very hard and the corneal epithelium had oxfoliated in large patches. Both retained painless and sightly globes. In the latter case, as the result of persistent attempts to seize the iris, a bead of vitreous protruded; nevertheless, the result was good. One patient, both of whose eyes were operated upon, has 20/30 vision though the sight of one eye had been reduced to recognition of hand movements during an acute attack.

Meller recommends a trephine 1.5 mm. in diameter and advises that a fairly large flap be made. If the iris prolapses or is found free, a peripheral section should be made but it is unsafe to make too vigorous efforts to seize it. The use of atropin for a few days, in order to prevent the formation of adhesions with blocking of the opening, is essential.

One of our patients with double glaucoma had an Elliott operation performed upon one eye and a large peripheral iridectomy upon the other. Although the tension in both eyes has remained low, the vision of the former eye has remained good whilst a small opacity in the lens of the other eye has impaired the vision. Thus far we have been fortunate in having no cases of infection, which may be due to the use of a large thick flap and care in not buttonholing it.

The last operative procedure to which I desire to call attention is the removal of the lachrymal sac. In this operation we follow the technic of Meller. We have endeavored to limit the operation to those cases in whom other and less radical measures have failed.

Simple strictures and dacryocystitis are handled by incising the canaliculus freely and passing the knife down through the nasal duct. Uhthoff reasoned that it was better to submit the patient to an initial operative procedure with subsequent almost painless probing rather than to cause him to undergo the repeated torture of having probes passed through a tight stricture. The method is essentially the same as that pursued in the treatment of urethral strictures. There has seemed to be much less tendency to the recurrence of the stricture after this method than when the membrane is repeatedly irritated by the passing of large probes without incision. Even after the rupture of an abscess, incision of the stricture with gentle probing has resulted in cure, and not infrequently rupture of the sac has been prevented by the internal incision. The removal of the sac has been rendered necessary by failure of the usual methods or because of the inability of the patient to submit to the more prolonged treatment. In no case have we found the subsequent epiphora to be disturbing and in all cases there was complete cessation of discharge, though on several occasions the re-opening of the wound was found necessary by reason of failure to remove all of the mucous membrane at the first attack. The operation is practically painless after the injection of 1 c.c. of novocain containing one part in ten of 1 to 1000 adrenalin. The first portion is injected under the skin, the second deep down along the lachrymal crest, the third portion about the cupola of the sac, and the remaining portion about the nasal duct. It is not necessary to regard the tarsal tendon and the resulting scar is scarcely noticeable. It is quite essential that a firm compress be placed over the region of the sac and that it be not disturbed for several days, the bandage being removed, however, for inspection of the cornea. The operation, though somewhat difficult and tedious to perform, is a valuable addition to our methods of treatment in these cases.

THE SKIN TEST IN TYPHOID.*

F. F. GUNDRUM, M. D., Sacramento.

Several communications have appeared during the past six years concerning a skin test for typhoid. Different observers have used different materials and different methods in making the test and a very considerable difference of opinion exists as regard its usefulness. Wolff-Eisner,[1] did not obtain a characteristic reaction with "Ficker's Diagnosticum." Link,[2] using an old bouillon culture got six positive reactions in nine cases of typhoid. Deehan,[3] upon 12 typhoid patients obtained a rather positive reaction. Floyd and Barker [4] report 19 of 30 typhoids positive with 18 control cases negative. Chauffard and Taussier [5] considered the test of little value; it was also given by controls. Gay and Force [6] used a special "typhoidin" applied just as is tuberculin in the well-known von Pirquet

* Extract from a paper read before the California Northern District Society at Stockton, November 10, 1914.

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test to investigate the formation of antibodies after immunization against typhoid with the vaccine of Gay. This "typhoidin" was made as follows: 250 c.c. of 5% glycerin bouillon was inoculated with B. typhosus (Dorset Army Strain No. 5) and incubated for five days. It was then reduced without filtration to one-tenth of its original volume by evaporation. This solution proved negative in 85% of persons who had had no typhoid, and positive in 95% of persons who had recovered from the disease.

In order to compare the skin reaction with the Widal test for agglutinins, all patients suffering from typhoid admitted to the Sacramento County Hospital during the past summer received a skin test at the same time the blood for Widal test was made. At first we used a suspension of dead bacilli, 100 million to 1 c.c., obtained from one of the commercial houses. One-tenth cubic centimeter (0.1 c.c.) of this bacterin was injected intradermally usually leaving a wheal about five or six m.m. in diameter. If a red maculo-papule as large or larger than the original wheal appeared between 6 and 48 hours from the time of injection, we considered the test positive. We tried this suspension of dead bacilli upon eleven patients, six typhoids with positive Widals and five non-typhoids. In no case did a satisfactory reaction develop. Then we substituted Gay's vaccine, a suspension of sensitized and ground up typhoid bacilli of greater bacterial density (750 million to 1 c.c.). Upon thirteen typhoid patients this suspension gave a distinct positive in ten. Ten also gave a positive Widal test, but not the same ten. Of nine malaria patients eight did not give a reaction. Of eight controls none reacted. The results are more easily seen in the accompanying table:

Suspension Typhoid Bacilli (Cutter's):					
Number Tested	11				
Number Typhoid	6	Widal	0	Test	0
Number Malarias	2	Widal	0	Test	0
Number Other Fevers	3	Widal	0	Test	0
Suspension Ground Sensitized Typhoid Bacilli (Gay's):					
Number Tested	30				
Number Typhoid	13	Widal	10	Test	10
Number Malaria	9	Widal	0	Test	0
Number Fever (Undiagnosed)	1	Widal	0	Test	1
Number Mixed Cases	8	Widal	0	Test	0

Thus the suspension of sensitized ground bacilli introduced intradermally gave reactions in as many patients as agglutination was observed in the Widal test, while the ordinary suspension failed to produce a characteristic response. The cause for this does not seem certain. It may have been due to a larger dose. Possibly the grinding of the bacterial bodies allowed a more marked toxin action at the site of injection. Of course this short series is not sufficient evidence upon which to base definite conclusions, but the findings seemed interesting and I have therefore brought it to your attention in the hope that much more data may be available at the end of the next typhoid season.

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2. * Link: Ueber Hautreaktionen bei Impfungen mit abfetoteten Typhus, Parathyphosus B, and Koli-Kulteren, Munchen, Med. Wchnschr., 1908, lv, 730.
3. * Deehan: The Typhoid Cutaneous Reaction. Univ. Penn. Med. Bull., 1909, xxii, 6.
4. * Floyd and Barker: The Typhoid Cutaneous Reaction, Am. Jour. Med. Sc., 1909, xxxviii, 188.
5. * Chauffard and Trosier: Reproduction esperimentale des taches resees lenticulaires. Comp. rend. Sco. de biol., 1909, lxvi, 519.
6. * Gay and Force: "A Skin Reaction" Indicative of Immunity Against Typhoid Fever Archives of Internal Medicine, Vol. 13, p. 471. No. 3.

THE PREGNANCY TOXAEMIAS—THEIR ETIOLOGY AND TREATMENT.**

By JAMES J. HOGAN, M. D., M. R. C. S., Eng., San Francisco.

The circulation in the blood of a pregnant woman of some, as yet unknown, toxic agent is the more generally accepted cause for the complex symptoms that we find present and while as yet no definite specific agent has been demonstrated we can at least see the effects of this toxemia in the different organs involved.

As any one part of this subject is so extensive I must content myself tonight to touch on the following phases:

First, that the circulation of this unknown toxic agent produces in certain organs, as the kidneys, liver and brain, definite pathological changes similar to those produced by toxic drugs, as chloroform, alcohol, phosphorous, etc. These changes are edema, cloudy swelling, fatty changes, hemorrhages and finally necrosis, in other words, changes that are produced when you interfere with the oxidation chemistry of the tissues. This oxidation chemistry can be interfered with in many ways, as interference with blood supply to an organ, the injection of acids in excess of the amount that can be oxidized and eliminated, and poisoning by certain toxic amines, as pyridin, cadaverine, and putrescence. Urea also in high concentration has the same effect. Recent experimental work has shown that these amines have as great a power in hydrating colloids as acids, and that the swelling so produced cannot be counteracted by the use of bases and salts as in the oedemas produced by acids but is relieved readily by the use of hypertonic sugars.

Secondly, that the signs and symptoms of pregnancy-toxemia to my mind are best explained in the following manner: That the circulation of these poisons produces definite pathological conditions in the organs involved, and the intensity of the symptoms depends on the organ involved and the degree of the intoxication. In the *medulla* you have the nausea and vomiting, *the brain* with drowsiness and convulsions, the *eye background* with dimness and loss of vision, *the liver* with

* Citations after Gay and Force.

** Read before the San Francisco County Medical Society, August, 1914.

beginning edema and terminal necrosis, *the skin and connective tissues* with edema, *the kidney* with its initial edema, diminished urinary secretion, albumin, and casts.

Thirdly, that we have in proper urinary examination early signs of beginning trouble, as shown by an increase of urinary acidity, and a diminution of the excretion of bases and a disturbance between the ratio of ammonia and nitrogen elimination. Along with this you may have present some of the ketone group; acetone and diacetic acid.

Fourthly, reasoning from this we would expect that means applied to reduce our initial edema and favor the elimination of these toxic products would be of benefit as a prophylactic measure, and that in the terminal stages the more energetic application of these principles would be a distinct step forward in the treatment of these cases. Taking these points in their order we must admit that at the present time we are unable to say what the specific poisoning we are dealing with in this case is, we do know that the maternal circulation is being constantly furnished the broken down products of fetal metabolism, and that the symptoms present resemble a protein intoxication, the mother finally, in the majority of cases, develops an immunity to it, and, in a small percentage of cases, is unable to do so. This protein is partly foreign to the mother as it represents the growth of two types, the spermatozoon, and the ovum. The pouring into the maternal circulation of these waste products of foreign protein must have an effect upon all the processes of metabolism in the cells and result in the production of incompletely formed products that interfere with their oxidation chemistry. Why these toxins should most frequently select say the liver or brain could be explained from the fact that these toxins are amides of fatty acids and are more easily soluble in lipoids than in other structures of the body. It may finally be proven that some type of toxin is responsible to initiate the changes in the organs involved. The upsetting of the metabolism in the cells produces these definite pathological conditions, beginning with edema and ending (if not relieved) in necrosis.

The important point that I wish to bring out is that the symptoms of pregnancy-toxemia are not produced simply because the kidney does not excrete these toxins, but by the effect of these toxins on the various organs involved; the involvement of *medulla* producing nausea and vomiting, *brain,* drowsiness and convulsions, *eye background,* dimness and loss of vision, *liver* with its symptoms of acute yellow atrophy, *kidney* with diminished urinary secretion, albumen and casts, *skin and connective tissue* with edema.

If these remarks be true we should expect to find in the urine evidences of an acid intoxication, and the earlier we recognize these changes the more hope we have to deal with a reversible process. It must be plain to us that while we may relieve an edema of an organ the chances of reversing a necrosis are nil. Now what early changes found in the urine would suggest that the oxidation chemistry of our body was being interfered with? We know that it is possible for a woman to die with convulsions and still show no signs of albumen, casts, acetone, diacetic acid, etc., in the urine, so waiting for these changes would be misleading.

I believe from the clinical work I have done in this line that the determination of the acidity, the output of bases (measured in sodium chloride) and the ratio between urea and NH_3 are means that may be used in any office and will give more information than anything else at our disposal today. Any method to be used by the clinician must be fairly accurate and easy of application. The time consuming methods of hydrogen ion concentrations would be out of the question for the general practitioner.

Now let us see the importance of these examinations and their interpretations. In the process of normal metabolism numerous acid products of the breaking down of proteins, fats, and carbohydrates are formed which must be excreted; of these Co_2 leaves the body in large quantities through the lungs, while sulphuric acid, hydrochloric, phosphoric and uric acid, etc., are eliminated by the urine always in combination with bases. If there is an inhibition of the oxidation process of carbohydrate and fat metabolism smaller or larger quantities of the ketone group appear in the urine. As all acids must combine with bases before they can be excreted, nature has protected carnivorous animals against the accumulation of these acid products; the ingestion of bases and salts with our food normally makes up for those used in neutralizing the acids formed. If this ingestion is cut down, or if more acid is formed than be neutralized in this way, as a further protection it is obtained from the body protoplasm where bases are held in chemical combination with this protein, and even if this fails nature has further provided that our protein may break down and form ammonia, but if the production of acid becomes so great that the supply of ammonia fails to neutralize these acids, the normal neutrality of the blood and tissues falls and terminal symptoms of an acid intoxication appear. The determination of urinary acidity may be done by the ordinary titration methods, but a more accurate and more easily applied procedure I find is a set of three indicators which gives you the hydrogen ion concentration by simply dropping a few drops of the indicator into some urine in a test tube or on a sheet of filter paper saturated with urine. These indicators have the following composition and are arranged in this manner:

1 Para nitro phenol	0.2	Alkaline (lemon yellow)
Alcohol	100.0	Acid (colorless)
2 Methyl Red	0.2	Alkaline (yellow)
Alcohol	100.0	Acid (red)
3 Rosolic Acid	0.5	Alkaline (pink)
Dissolve in alcohol	50.0	
Then add distilled water	50.0	Acid (no change)

The urine of a patient at rest should be alka-

line to No. 2 methyl red. If acid to it there is a tenfold increase. If acid to the next indicator above (para nitro phenol) there is a hundredfold increase. Urine is seldom alkaline to rosolic acid unless patients have been treated with alkalines, or have bladder infections, in the latter case a microscopical examination will reveal this. Now the mere increase of acidity is not sufficient to diagnose an acid intoxication; you must next determine if the body is holding back its available bases. This may be done by testing for the excretion of chlorides by Mohrs's method. This method is selected because it is easily applied by the clinician. Into a Erlenmeyer flask place—

10 c.c. urine
100 c.c. Dist. Water
10 drops 10% solution potassium bichromate

Into this from a graduated burette drop by drop the solution of silver nitrate (29.06 gms. to the 1000 c.c.); do this till the yellow color changes to orange. For every c.c. of the silver nitrate solution used multiplied by 0.01 gives the amount of chlorides in 10 c.c. urine and knowing the total amount of urine passed the total amount of chlorides can be computed. The normal individual passes from 15 gms. up according to amount ingested. You will find that when the urinary acidity remains constantly high that the output of chlorides gradually diminishes so that in some instances there is only a trace. I believe this indicates that these bases are being utilized by the body proteins to counteract the effects of the increased acid production.[1] When the body utilizes these available bases in order to protect itself it then breaks down its proteins into ammonia to still further help neutralize these acids. The normal ammonia output is below 0.7 grams, but in these instances this greatly increases so that instead of it being 4 or 5% of the total nitrogen it runs up to 20% or more.

A simple titration method for the estimation of ammonia, which only takes five minutes to apply, is the following: Into a flask place 10 c.c. of urine, 5 grams neutral potassium oxalate, and 50 c.c. distilled water, and a few drops of 1% phenophthalein. Mix well. Into another flask place 5 c.c. of 20% formalin, and a few drops of phenophthalein; bring both to neutral point by adding drop by drop n/10 Na OH. Now add the formalin mixture to the urine. This drives off the ammonia; then add from a graduated burette n/10 Na OH till the pink color returns. Every c.c. of n/10 Na OH used equals .0014 grams of ammonia in 10 c.c. of urine; this multiplied by the amount of urine gives the amount of ammonia present. By dividing the ammonia into the urea output you can get the ratio. This is normally between 1 in 20 to 1 in 30.

The upset of carbohydrate and fat metabolism is shown by the presence of acetone and diacetic acid and should always be noted as it calls for intensive carbohydrate feeding when present.

Treatment. If this reasoning has been correct we should expect that means employed to relieve the initial tissue edema and to combine with these toxins and favor their elimination would be productive of good results. Martin Fischer has shown that the hydrating effects of free acids can be counteracted by not only alkalies but neutral salts, and that when this hydration takes place by the non-electrolytes, as urea, alcohols, and toxic amines, alkalies and salts are of no effect, but dehydration can be accomplished by the use of hypertonic sugars, as *dextrose.*

As a prophylactic measure I see that the urine is kept alkaline to methyl red with any of the alkaline mineral waters, with the addition of a liberal carbohydrate diet. I believe if this is carefully carried out we would have few terminal toxemias to treat.

In the severe types of pernicious vomiting, and the cases bordering on or in convulsions more energetic measures must be resorted to. In these cases I always perfuse them, using directly into the veins at least 2000 c.c. of the following solution:

Na Cl	28.0
Na_2Co_3 10 H_2O	20.0
Ag Dist. (fresh)	2000.0

In using this cut down on the vein and introduce a small canula so that the solution will run in slowly. If you attempt to give this solution with a sharp needle through the skin you will get a slough if any gets into the tissues. At the same time drip into the rectum the following solution:

Dextrose (Anhydrous)	100.0
Ag. Dist.	500.0

You may criticize me for not mentioning in detail the treatment of the various symptoms of pregnancy toxemia, as headache, convulsions, high blood-pressure, etc., but as I contend they are all due to a common cause starting in edema and terminating in destruction of the organ involved, any method of treatment to be effective must be capable of inhibiting or changing these conditions if they have not gone on to an irreversible change.

As the treatment I have outlined attacks the initial cause of the various symptoms a repetition of them in detail would be a repetition of the various principles that I have attempted to place before you.

The overflowing of the circulation with large quantities of this sodium chloride, sodium carbonate mixture when you are dealing with a high blood-pressure may seem bad therapy, but instead of raising the blood-pressure by this means I find it the safest way to reduce it. In a subsequent communication [2] I will bring out the proof for this latter statement.

Discussion.

Dr. Thomas Addis: I do not quite gather from what Dr. Hogan said whether he regards toxemic conditions in pregnancy as an acidosis or not. It seems to me he showed some ten-

[1] In some recent experimental work Martin H. Fischer has shown that proteins when subjected to the action of an acid not only swell but absorb an increased amount of chlorides. (Personal comment.)

[2] Treatment of symptoms of high blood pressure by intravenous perfusion. James J. Hogan, M. D., M. R. C.S. Eng. Cincinnati Lancet Clinic, Jan. 2, 1915.

dency to shift over to substances such as putrescin and cadaverin. Suppose, however, that he maintains that there is a true acidosis in these conditions. If there is an acidosis—the term obviously means poisoning by acid—it seems to me that one of the first requisites before one defines such a condition is that one should have an acid that one can lay one's finger on. There is a true acidosis in diabetic coma, and we can say what the acids are: beta and oxybutyric and diacetic acid, and they are found in enormous amounts in the urine and in the tissues. But in this acidosis that Dr. Hogan talks about, matters are much more vague. There does not seem to be any particular acid. Lactic acid has not been found in large amount in the urine in cases of this description. There has been talk about amino acids. Dr. Hogan mentions that in two cases he found amino acids in the urine. Surely he knows that they are normal constituents in every urine. There is nothing to be made of in that. They may increase slightly in any marked disturbance of metabolism. No one has found in these cases any acid in any amount that could possibly cause damage to the body. There is just one other point about the urine. Dr. Hogan talks about an increase of the hydrogen ion concentration of the urine. He cites that as a reason for supposing that there is a poisoning by acids in these conditions. The hydrogen ion concentration, as a matter of fact, is no guide to the presence or the extent of an acidosis. It may, for instance, be entirely normal in diabetic coma.

He also talked about retention of bases in these conditions as indicative of acidosis but he mentions only sodium chloride. The retention of sodium chloride does not give any indication of acidosis. Sodium chloride is an entirely neutral substance, not a base at all, and would have no effect in neutralizing any possible acid.

I think it is time that there should be a protest against the application of this word "acidosis" to all this group of conditions. It is entirely unjustifiable from every point of view. There seems to be a sort of general tendency in America, England and Germany to group all these conditions under "acidosis," and they are trying to get all sorts of evidence, but they have not the one essential point of having an acid. The effort made to shift the thing over from the urine to the tissues seems to be without foundation. One does not find any proof of an abnormal amount of acid products in the tissues. Dr. Hogan makes the point that this is a clinical matter and that although the scientific aspects of the subject may not be clear, still there are indications for a useful method of treatment. I think one should be very cautious about practicing any new methods of treatment which depend entirely on clinical results. One knows how these conditions sometimes clear up very rapidly without any treatment at all. I think it is doubtful if any treatment should be given in such cases, especially such a possibly dangerous one as intravenous alkaline injections, without some sound scientific reason for it, and such a reason, I think, has not yet been given.

Dr. A. B. Spalding: I have listened to Dr. Hogan for two years, and I have hoped he would present, some time or other, an accurate report of a series of clinical patients. He never has done so. I could not listen to such a paper as Dr. Hogan has read this evening without entering some protest. If practitioners are to diagnose toxemia in pregnancy by finding acid urine and are to neglect all pregnant women with alkaline urine they are going to do great harm. If they are to delay the cure of a patient because the urine happens to be acid, and not alkaline, and allow these patients to go to convulsions (I have seen them go on to convulsions) with alkaline urine, they will do still greater harm to the community. I do not believe there is anything important clinically to be gained by a study of the hydrogen ion concentration of the urine. To lead the profession away from well-known methods for watching patients that are pregnant (such as a routine study of blood pressure); to urge that pregnant women be permitted to go along without attention except a reaction test of the urine, is something that is beyond my conception of intelligence. We have to watch very carefully patients that are pregnant. They are in a serious condition. They are carrying a foreign proteid in their blood that may express itself, when not properly digested, in a great many ways which clinically are called toxemia of pregnancy. It takes more than has been given to us by Dr. Hogan tonight to properly safeguard the pregnant patient.

Dr. R. Knight Smith: When people like Dr. Hogan, Dr. Addis and Dr. Spalding disagree, I do not see why I should have anything to say, but I have just a little.

I do not know what the condition is that produces toxemia in pregnancy, and neither does anyone else. We know that ordinarily it is manifested by certain definite symptoms of certain definite organs. We also know that so far we have had no remedy for it except cutting down the amount of intake of food and increasing the amount of elimination. As Dr. Hogan has expressed it, when these conditions are ordinary, the urine is alkaline to methyl red solution, as he exhibited tonight. Pregnant patients having symptoms of toxemia practically always have an increase in the amount of acid reaction, in the amount of color on the piece of paper; in other words, where the normal urine gives a yellow color to the methyl red, where there are symptoms of toxemia it becomes scarlet red. A few days' treatment in these cases, with reduced diet and some Vichy water, producing the yellow or alkaline reaction in the urine, always relieves the symptoms the patient has been exhibiting. Allow me to present a case. Mrs. H. comes from abroad, giving a history of chronic nephritis, of premature labor at about seven months to save her life, saying her diet had been laid down as so and so, which was absolutely first class for the condition involved, having an intensely acid reaction in the urine with casts and albumen in abundance. A change of diet, a bottle of Vichy water for three days resulted in alkaline reaction, no casts and no albumen, and she has continued so for a number of months. Whether there is anything in it or not, I do not know, but it is well worth such people as Dr. Spalding and Dr. Addis giving it their absolutely scientific investigation and giving us the benefit of their investigation.

Dr. Martin Fischer: Mr. President, if I may have a word—I have listened with great pleasure this evening both to Dr. Hogan's remarks and to the stimulating criticism. I do not think there is half so much reason for differing in views as there seems to be. Inasmuch as in some of the things that have been discussed I have worked myself, may I be pardoned not only for discussing Dr. Hogan's paper but also for making a remark or two on some of the criticisms?

Whenever we talk of acidosis it is well to begin with a definition. I am glad to hear Dr. Addis say what most people do not say, namely, that it is to be looked upon as synonymous with the words "acid intoxication." The mere finding of certain abnormal substances in the urine, as the acetone bodies, is not an indication of acid intoxication. It is evidence of an abnormal metabolism which is producing abnormal acids and nothing more. When these come to be formed in such great amounts that they more than balance the bases normally available, be this fixed base ammonia or protein (with which acids and alkali are

both able to combine), then an acid intoxication is at hand.

Let us first ask what evidences develop in any animal if we deliberately poison it with acid. It dies rather shortly with those characteristic symptoms of disturbances in respiration, disturbances in circulation, coma, convulsions, and certain changes in the parenchymatous organs identical with those observed in patients dead of an acid intoxication. Before death occurs, what do we find in the blood and in the urine to indicate the acid intoxication? We find in both evidences of an increased acid content as betrayed by an increased titration and hydrogen ion acidity of the urine and a decreased titration alkalinity and increased hydrogen ion acidity of the blood. Because these changes are not of a blatant type it has been said that they are of no significance, or, in the words of some critics, that similar changes in the titration or hydrogen ion acidity of the body secretions are not evidence of an acid intoxication.

The incorrectness of such argument can be readily appreciated if we but recall the experiments of the chemical laboratory. Suppose we take a protein material like eggwhite and put an indicator into it. The mixture shows a certain degree of alkalinity to the indicator. If we now begin adding acid to the protein the indicator does not at once begin to change. Would anyone maintain that because we see no change in the indicator no acid has yet been added? If after adding some 5 or 10 c.c. the indicator still shows no change would anyone say that the acid content of the protein has not yet been increased? Certainly not. The progressive change in the protein is evident from the moment that the first fraction of acid is added if we will only use a proper method for discovering it, such as the measurement of the viscosity or the swelling of the protein.

Exactly the same thing happens in the body. From the moment that we consume or produce any acid we increase the acid content in the body and may get an increased swelling, but for obvious reasons an indicator may not immediately betray the presence of the additional acid. It is for these reasons that we do not at once see a change in the acidity of the urine. The body possesses various mechanisms for neutralizing acid and not until these have been heavily drawn upon will the reaction of the urine or any other secretion change perceptibly. An acid intoxication is met originally by the fixed bases in the body; the proteins also combine with acid and neutralize it. In the carnivora, moreover, among which we are to be counted, the organism has a third method of meeting the acid intoxication, namely, by an increased production of ammonia. If you do not believe these things you can easily test them out for themselves. Nature does it many times. When we voluntarily produce large amounts of acid, as in muscular exercise, the acid content of the body mounts up. If the urine is examined before and after such exercise a marked change in its titration or hydrogen ion acidity will be noted. Moreover, if the exercise has been continued long enough the increased acidity will be accompanied by albumin and casts.

So far as the nature of the acids appearing in the body is concerned, the following may be said: In many metabolic disturbances other kinds of acid than those "normally" produced may appear. Thus, diacetic and betaoxybutyric acids are produced in carbohydrate starvation, while lactic, valerianic, and succinic acids are often produced, at times in enormous amounts, in circulatory disturbances, in the anemias, and in many of the intoxications. But the production of abnormal kinds of acids is not the characteristic feature of acidosis. In the absence of sufficient alkali, with excessive protein feeding, etc., the sulphuric and phosphoric acids (of which in addition to carbonic acid we produce large quantities daily in our metabolism) may alone bring about an intense acid intoxication without the appearance of any abnormal acids in the urine. The characteristic feature of acidosis resides in the overbalance between available alkali and acid in favor of the acid side.

Dr. Hogan has brilliantly emphasized a number of points. If you do not believe that there is evidence of an acidosis in the pregnancy intoxications I would suggest that you follow his advice and test the urine as he has described. It is a very simple matter to determine whether or not your patient is showing a persistently high hydrogen ion acidity of the urine. If you have a patient who is running persistently acid to methyl red and you can not reduce this acidity by feeding alkali you have a dying patient on your hands. I have never seen such a case recover, no matter what lay behind the acid intoxication, whether a pregnancy nephritis, a heart disease, or a diabetes.

I should like to emphasize that the matter of whether pregnancy intoxication is wholly an acid intoxication or not is rather beside the point. The main fact is that the changes in the kidney, the changes in the liver, the changes in the brain, etc., are in essence all edemas of the affected parts. When these edemas affect a kidney, a brain, or a medulla they are likely to prove fatal, because these organs through hampering capsules and bony surroundings cannot swell indefinitely without shutting off their own blood supply and so killing themselves. The important element in treatment is to reduce this swelling. The swelling itself represents, technically put, an increased hydration of the colloids of the involved parts, and there is no question but that an abnormal accumulation of acid in such parts is one of the causes. There is certainly no harm in recognizing this obvious fact, and so by the use of alkali and salts trying to lessen the severity of the clinical symptoms.

I should also like to emphasize that not every albuminuria developing in a woman in the course of her pregnancy is at once to be regarded as a consequence of this. Infections of the kidney may occur during pregnancy as at any other time in the life of an individual and many an arteriosclerotic with kidney involvement falls pregnant. I have also seen nephritides in pregnant women in which it was held that the protein intoxication was responsible for the death of the fetus when as a matter of fact, the story was the other way about. The fetus frequently dies in utero in a syphilitic mother and its decomposition then gives rise to an intoxication which manifests itself from the side of the kidney by a decreased urinary output with albumin and casts.

It is rather curious to see how we cling to the religion of our youth as we work along in medicine. No matter what new fact experiment may show, we continue all too often unmoved along the path of teaching of our early days. There is no bigger fairy tale than that to which Dr. Hogan has called our attention, namely, that of the so-called consequences of kidney disease. What we call the consequences of kidney disease are almost without exception not such. The generalized edema, the "uremia," the high blood pressure are not due to any lack of kidney function, for if we cut the kidneys out of an animal or if in a patient the surgeon or nature performs this experiment for us, none of these symptoms result. But when we give an animal a "kidney poison" of some sort, such as uranium, it develops an edema in the course of a few hours which at the end of a couple of days may have increased to represent fifty per cent. of the original body weight. The animal at the same time shows an increasing stupor and is likely to go into convulsions. These findings mean only one thing, that what we call

the consequences of kidney disease are not consequences but the same thing as the kidney disease manifested in the different organs of the body and all due to the same poison which produced the kidney change.

If we apply this principle to the pregnancy intoxication we can see that to go home from such a case satisfied because the urine shows no albumin and casts is a dangerous mistake. In spite of that the woman may die of convulsions, for the poison which has left her kidneys unharmed may in its unequal distribution through the body attack the brain. The headache of which your patient complains is a more serious symptom than any amount of albumin or any number of casts, because she cannot stand as much swelling in her brain as in her kidneys.

The matter of whether a man in practice will or will not use alkali and salt in his pregnancy cases must, in the end, be left to his own judgment and conscience. Unless there is some good reason for using these things, by all means let us withhold them. What we do is after all but an expression of what we are as scientific men. Many centuries ago Aristotle put it very well when he said that the man of experience is interested in the fact and the man of science in the wherefore of the fact. I must say, as a man who works daily in medicine I am constantly surprised at the ease with which men talk about facts and handle facts in our science and never ask why they are or how they are to be connected. It makes us men not of science when we do not try to put them together. Now clinical experience is a very important and very essential thing, but why must thousands of pregnant women go through our hands each year and we never ask why that thing we call pregnancy intoxication occurs? Why must we give an ounce of magnesium sulphate because "John Smith" says so, or so many drops of veratrum viride because Peter Jones says so? May we not ask why? Unless there be some sort of reason for our activities let us do nothing.

So far as the question of the nature and the cause of a pregnancy toxemia is concerned the solid fact remains that in this condition we have to do with edemas of the brain, of the kidney, of the liver, etc., all of them the expression of a toxic injury to the involved organs. Whenever any organism or any part of it is injured it swells. This reaction goes down to the individual lacerated cell. A glass point pushed into a cell is followed by a streak of edema. It is the one universal reaction to injury. We have already seen how swelling in certain organs is followed by serious consequences. Is it not logical to ask how we can reduce it? The reason why proptoplasm swells is a pretty well settled thing. The amount of water it holds normally is increased. All the water in our body is held as hydration water, and edema is simply a state of increased hydration. When we have come to this conclusion we need next to ask how the increased hydration is brought about. We know physico-chemically what substances will make colloids hold a more than normal amount of water. Is it forbidden to use such knowledge in the clinical case? There is no question about an abnormal production and accumulation of acid in the involved parts playing a big role, probably the biggest. Urea may also play a role as well as the amines and like substances. Some of the toxins are amines. When we deal with an acid hydration we know that we can reduce it very easily by employing alkali and salts. A urea hydration and other hydrations not reducible through salts and alkali are reducible through carbohydrates. What is there harmful about using alkali, salt, and dextrose on a patient, especially if we and our colleagues think she may die? If after they have been used she does die, the expected will merely have happened. If she lives it proves nothing, but it may encourage repetition of the experiment.

What, after all, is the purpose and the ultimately achievable in all our practice? It is true that nature cures most of the cases. But when can nature do this? Only when the process is reversible. Not even nature can cure a third stage burn. Our function as doctors is to find out which processes are reversible and which are not, and to aid nature in hastening the reversion.

I think that is about all to be said in the matter. I thank you very much for your attention.

Dr. Hogan (closing): There is little for me to add as I believe Dr. Fischer has answered to my way of thinking the criticisms of Dr. Addis, and it would be useless for me to reiterate them. As to Dr. Spalding's remarks, they seem more of a personal nature; he demands, as a teacher of obstetrics in this community, that he is in a great way responsible to prevent any of you here from being misled into short and false cuts in the diagnosis and treatment of the toxemias of pregnancy. Dr. Spalding may not think so but the energy he so kindly gives me credit for has been expended for the past three years in trying to apply some of the principles of physical chemistry to clinical medicine. If my work is right it will stand by itself, and no amount of personal opinion will break it down; if it is wrong it will fall by its own weight. Time alone will test this.

I wish to repeat what I have said before: I believe every word I have given you tonight is founded on strong experimental proof and has been tested on enough clinical material to prove its worth.

I do not ask you to diagnose and treat your pregnancy toxemias by the use of a single indicator. If Dr. Spalding had followed me he would have understood that I stated that you have an early easy means in diagnosis; first, by the increased urinary acidity; second. the retention of salts, as shown by sodium chloride; third, an upset in the ammonia coefficient, and I wish to state here that these changes long precede the high blood-pressure that he speaks of. When you have severe headaches and high blood-pressure it shows a beginning brain edema, which is a late sign.

I do not ask you to take for granted what I say but would suggest that you try it for yourself, and let your personal results decide the matter in your own mind. I thank you very much for your attention.

Dr. A. B. Spalding: In reply to your remark that my remarks were mostly personal, I admit they are personal, and I intended to make them personal, because I think you are trying casually to present something that should be seriously handled and without showing the doctors a scientific study of a series of patients. Toxemia in pregnancy when accompanied with convulsions carries a high mortality and any new method of treatment should be backed up by a report of patients showing whether you are reducing the mortality or not. Your papers have not, so far, presented such facts. Personally, I have a high regard for your energy and particularly for Dr. Fischer's theories, but I do not believe any practitioner should come out as you have done and present such a serious subject without clinical facts to show that by testing the urine for acidity more accurate diagnoses can be obtained than have in the past been obtained by more extended observations of pregnancy, and also that the present mortality of eclampsia can be lowered by any treatment based upon such a urinary examination.

THE INFLAMED EYE—SOME COMMENTS ON ITS DIAGNOSIS.*

By GEORGE H. KRESS, B. S., M. D., Los Angeles.

The subject of the inflamed eye, and its diagnosis, is taken up before this society of general practitioners, not so much because it is possible to present much that is new or startling, as for the reason that the inflamed eye, as such, is often first seen by the general practitioner; and because the subsequent cosmetic and economic efficiency of both the eye and the individual can be said in certain of the graver of inflammatory conditions of the organ of vision, to depend largely upon what steps are taken in the way of treatment at the beginning of the trouble.

Diagnosis becomes, therefore, a matter of considerable importance. In discussing the diagnosis of the inflamed eye, it is necessary to keep in mind certain of its anatomical characteristics, because the symptoms are often largely dependent upon the peculiar anatomy of this organ; and a brief review of these will therefore be first outlined.

A BRIEF SURVEY OF THE ANATOMY OF THE EYE.

To begin then, as regards the bony orbit. There must be kept in mind the connection with the neighboring nasal sinuses, and the possibility of extension of inflammation from these adjacent cavities. Likewise, must be remembered the adherent periosteum of the bony orbit, and the very loose meshwork of connective and fat tissue in which the eyeball is virtually slung.

In the eyelids, there is also a great amount of connective tissue, interspersed with the cartilages and Meibomian glands. Malposition of eyelashes can be sources of irritation, also.

At the inner angles, the lacrimal puncta, and the lacrimal canals and sacs, present problems of drainage and possible infection.

The conjunctiva upon the internal aspect of the lids is quite loose, and is freely supplied with blood vessels; upon the white sclera it is much less loosely applied; and upon the cornea, the single layer of conjunctival epithelium is most firmly attached. The conjunctiva, in its function as a mucous membrane, must be remembered as having a direct connection with the mucous membrane of the nasal and oral cavities.

In the cornea, we have to deal with the clear window-like structure that covers the anterior fifth of the eye, and which consists of three layers; the thin anterior layer of epithelial cells resting on the homogeneous Bowman's membrane; the major or middle layer being largely a specialized connective tissue stratum; and the posterior surface being likewise of a somewhat homogeneous character, with a layer of endothelium, as described by Descemet. This non-vascular corneal structure has coursing throughout, a very large number of non-medullated nerve fibres, whose great sensitiveness gives prompt warning of injury to the structure.

In the white sclera, or outer covering of the remaining portion of the eye, we deal virtually with a continuation of the sheath of the optic nerve, the whole being of a quite fibrous and firm makeup.

The iris, or curtain of the eye, presents the center aperture, or pupil, and gives us for consideration, a somewhat circular and contractile tissue, composed of elastic and muscular fibres and blood vessels. The ligament of the iris permits it to hang in the aqueous humor cavity between cornea and lens, so as to divide that space into two parts, the anterior and posterior chambers.

In the middle coat of the eye, or choroid, we deal with what is usually a very much pigmented structure, and which is most generously supplied with blood vessels. At the margin of the cornea, the edge of the choroid slips forward to form a sort of frill, to which we give the name of the ciliary processes.

Internal to the choroid of the eye, we have to consider the retina, which is nothing else than the extension forward in an expanded form of the optic nerve.

The vascular supply of the various tissues just enumerated, and the intimate anastomosis of some of the different groups of vessels, is very important in the interpretation of the symptomatology of inflammatory eye conditions. The possibility of great extravasation of serum and blood into the loose orbital tissue from the ordinary blood vessels of the orbit, is a phenomenon with which all are familiar. The ophthalmic arteries and veins which enter with the optic nerve, in themselves, however, are not so often concerned with external inflammations of the eye.

The blood vessels of the conjunctiva can usually be recognized as they pursue their winding course forward, their color being brighter, and they being moved easily with the conjunctiva itself.

The non-vascular nature of the cornea has already been mentioned, but outside its edge, or limbus, we have the anterior ciliary arteries, which coming forward along the recti muscles, perforate the sclera in this region. The sclera, farther back, about one centimeter or so away from the limbus, is also pierced by the posterior ciliary vessels, which proceed forward and anastomose with the anterior ciliary arteries. The anastomosis of the various sets of blood vessels has much to do with giving any information of the eye, its "special color" or picture.

So much for the discussion of some of the anatomical features of the eye, which, as stated before, are taken up here only because in the presentation of symptoms, a clear picture of the anatomy will help make easier an understanding and interpretation, of the subjective and objective phenomena as met with in inflammatory conditions.

THE OBJECTIVE AND SUBJECTIVE EXAMINATIONS OF THE INFLAMED EYE.

So much dependent upon the vascular phenomena are the pictures of inflammatory conditions of the eye, and so closely interrelated are these vascular supplies of the different eye tunics, that the inflammatory condition as it first confronts the physician, only too often presents a picture that is

* Read before the Long Beach Medical Society, Long Beach, Cal.

confusing; because when the eye is seen for the first time, the secondary irritation may in good part obscure the original features of the disease process. On that account, a carefully taken history will aid greatly in the making of the differential diagnosis.

History. First, then, it is important to know whether one or both eyes are affected, and if both, which the more, and to know the date of onset of the condition, and the chief symptoms which are complained of.

In the matter of pain or tenderness, its location, kind and duration can be important. Sensations such as itching, feeling of sand, or other discomfort, such as smarting of the lids, may be facts worthy of note. The flow of tears and the amount; headache, location, type and periods during which it is most aggravated; and visual acuity, whether it is obscured or materially diminished, must not be forgotten.

In connection with the subject of visual acuity, it may well be asked whether every general practitioner should not have as a part of his general office equipment, an eye chart designed for the testing of distant vision. The chart arranged by the A. M. A. Conservation of Vision Committee, and which can be purchased from F. A. Hardy & Co., Chicago, at a cost of twenty-five cents, is one which contains full directions, and which is very well adapted for such tests.

The above belong to the subjective phenomena met with in external inflammatory conditions of the eye. In inflamed eyes, the objective examination usually concerns itself first with those signs which can be determined by daylight.

Daylight Examination.

Daylight Examination. Under this head the following items must be noted: Whether or not the eye is congested, and if so, whether this congestion seems to be more limited or centralized to the conjunctiva of the lids; to the region of the corneal limbus; or whether it is of a more posterior and of a deeper or episcleral type.

The amount of discharge, whether of a simple or purulent character; and the condition of the tear sac, and whether pressure exposes any abnormal secretion therefrom.

The patient's dread of light, or photophobia; blinking and nystagmus; the condition of the lashes and lid margins.

The tension of the eyeball, as taken through the gently closed lids with the finger tips (or if in doubt, with the instrument known as the tonometer).

The condition of the conjunctiva, both of the lid and globe and of the sulcus folds.

In the window of the eye, or cornea, the existence of ulceration, the presence of foreign bodies, or of opacities of different degrees of density.

In the anterior chamber, there may be a change in the depth, or the aqueous may be less clear; or there may be an exudate, such as a pus exudate (hypopyon), or there may be a blood extravasation (hyphema).

The iris may be changed in color, and its markings less distinct; it may be tremulous, or its pupillary edges may be attached to the lens capsule by adhesions.

The pupil may take an irregular shape, owing to adhesions; and its capacity and rapidity to react to light, and also to accommodate, and whether the size of the pupil is the same in both eyes, all must be taken into account.

The above are some of the major phenomena to consider in the examination with daylight.

Dark Room Examination. In the dark room, or in a partially dark room, an ordinary hand flashlight lamp, held to throw light upon the eye cavities, can corroborate or make plainer some of the conditions just noted.

If one has the regular ophthalmoscope, or what is easier to work with and especially much more easy for the general practitioner, one of the electric ophthalmoscopes, one is able, with no lens in the aperture and at a foot's distance or so, to come to a better understanding regarding the exact form and density of foreign bodies, or opacities, in the cornea; and then by swinging the wheel to bring into range the plus 16 diopter lens, and then examining the eye at the focus of that lens, one can corroborate still more of what was previously observed. With the ophthalmoscope, too, it will be possible to determine the presence of opacities and foreign bodies in the media and the fundus. The intensity of the red fundus reflex will also tell one promptly the general condition of the interior of the globe, and with the proper lens, the exact condition of the fundus may in most instances be observed.

Those of you who meet with eye conditions in your work, may find the copies of the charts which were devised by the writer for use in the State University Clinic, at Los Angeles, to be not without some interest and some value as a means of rapidly obtaining and tabulating a fairly complete history. (See adjacent pages for copies of these charts.)

Referring to these charts, you will note that on the front of these five- by eight-inch filing cards, there is a spacing for longhand histories at the top of the page (for the three questions of date of onset, eye most involved, and the chief symptoms), which can be continued on the other side in the third column. Also that the arrangement of the card divides into two major groups, the subjective and the objective examinations; subdividing the objective into those signs that are noted by daylight, and those that are noted in the dark room (these latter, or dark room inspections, being carried on first by means of a flashlight lamp for oblique illumination, with or without a magnifying lens, or with magnifying spectacles; and second, with the ophthalmoscope, with and without lenses of varying degree).

With a history taken along the lines indicated, we have gathered on the whole data upon which the diagnosis will be made, and this portion of our subject can now be considered.

THE DIFFERENTIAL DIAGNOSIS OF THE MAJOR GROUPS OF INFLAMMATORY EYE CONDITIONS.

The particular group of inflammations of the

Surname ____ Given Name { Mr. / Mrs. / Miss } ____ Address ____ St., City ____

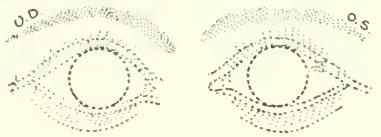
Card Number ____ Date ____ 1. Race ____ 2. Sex (M.F.) 3. Age ____ 4. Social (S. Md. Wid.) 5. Nativity ____ 6. Occupation ____

7. History (*Note: Write here chief organs and sites affected, date of onset; and notes, if pertinent, on personal and family history, previous eye diseases, chief symptoms, outline of previous treatment; present treatment; course, etc.*)

(*Note: This history, with treatment, etc., is continued on the other side. See item 46*)

8. Tentative Diagnosis is ____ 8a. Final Diagnosis is ____ 8b. This patient in service of Dr. ____ 8c. This history taken by Dr. ____

9. Outline of Treatment:



I. SUBJECTIVE EXAMINATION

10. State here what eyes are referred to O.U. O.D. O.S.
11. Pain { Location / Kind / Duration }
12. Sensation { Smarting / Itching / Sandy / Discomfort }
13. Lacrimation { Amount / Character }
14. Reflex { Headache { Location / Character / Time worst } / Indigestion / Neurasthenia }
15. Visual acuity { Distance { O.D. / O.S. } / Near O.D. reads No. ____ at ____ " / O.S. " No. ____ at ____ " / Date of onset dimin. vision / Dark spots before eyes }

II. OBJECTIVE EXAMINATION

A. DAY LIGHT

16. Congestion { Conjunctival / Corneal circumcorneal / Episcleral / Subconj. hemorrhage }
17. Lachrymation increased
18. Discharge { Amount / Character }
19. Photophobia
20. Blinking
21. Nystagmus { Horizontal to / Vertical / Rotatory }
22. Palpation { Increased tens / Decreased tens / Tonometer registers }
23. Lids { Swollen / Power closing / Edges }
24. Tear Sac (On pressure)
25. Cilia
26. Conjunctiva { Upper { Bulbar / Tarsal / Retro-tarsal } / Lower { Bulbar / Tarsal / Retro-tarsal } }
27. Cornea { Inflammation / Ulceration (draw diagram) / Vascularized / Opacities / Foreign bodies / Sensitiveness / Reflexes }
28. Ant. Chamber { Depth / Clearness / Exud. etc. { Hypopyon / Hyphaema } }
29. Iris { Color / Tremulous / Adhesions (diagram) }
30. Pupil { Size / Shape / Light reaction }
31. Miscellaneous

Note: For dark-room, vision tests, etc., see other side.

INSTRUCTIONS TO CLINICIANS—Write plainly; strive to keep records accurate and up-to-date. Plus sign (+) indicates yes or positive; zero sign (0) indicates no or negative. You can underline special symptoms to draw attention, if desired. When neither yes or no sign is used, it is assumed no abnormalities are present. Draw diagrams when possible. (Arranged by G.H.K., Oct. 10, 1913).

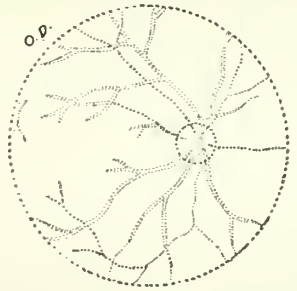
Continuation of History of Card No. _____ Patient Named _____

II. OBJECTIVE EXAMINATION, (*Cont'd*)

B. Dark-Room

32. Obliqne Illumination { Media clear / Opacities { Shape / Color }

33. Opthalmoscope (Indirect Ex.)
34. Opthalmoscope at 16″=Media .....Clear
34. Opthalmoscope with + 16 D. lens=
35. Opthalmoscope (direct ex.)



Right Eye O.D.

- Disc.
  - Shape is circular .....
  - Color is rose-reddish .....
  - Edge is.....well defined; .....tendency to merge off .....
  - Cup is ....sm., mod., large; shallow, deep
  - Chor. ring is .....faint, thick: all round, more on .....side
  - Scleral ring is .....faintly present
  - Lamina does not show.....
- Bld. Vess.
  - Number and course.....approx. normal
  - Light reflexes..... good on veins and art
  - Feeble, moderate, marked pulsation of following veins .....
  - Tortuosity of following bld-vess. .....
- Mac. Reg. { Col. reddish. One.....bright foveal dot present .....
- Fund. { Fundus of feeble, moderate, pronounced blonde, brunette type..... / Pigmen.....homogen.; .....tessellated

36 Left Eye O.S { Approximates O.D. except as follows:

III. REFRACTION TESTS

37. Opthalmometer:
  O.D. = ± ..... at axis.....
  O. S. = ± ..... at axis.....
38. Manifest:
  O.D. = ... Sph. =..... Cyl. axis.....=
  O. S. = ... Sph. =..... Cyl. axis.....=
39. Near V.:
  O.D. Reads No. .....at.....inches
  O. S. Rdeas No. .....at.....inches
40. Muscle Bal.:
  .....degrees Esophoria
  .....degrees Exophoria
  .....degrees Hyperphoria
41. Retinoscope:
  O.D. =..... Sph. =..... Cyl. axis.....
  O. S. =..... Sph. =..... Cyl. axis.....
42. Cyclopleg. T.C.:
  O.D. = ... Sph. = ... Cyl. axis.....=
  O. S. = ... Sph. =..... Cyl. axis.....=
43. Post-Cyc. T.C.:
  O.D. = ... Sph. =..... Cyl. axis.....=
  O. S. = ... Sph. =..... Cyl. axis.....=
  O.D. with above reads No.....at.....inches
  O. S. with above reads No.....at.....inches
44. Prescription:

Date..... *See also R Book*..... *Page*.....

		SPH.	CYL.	AXIS	PRISM	BASE
DISTANCE	RIGHT					
	LEFT					
READING	RIGHT					
	LEFT					

45. Miscellaneous

46. History, (*Cont'd from top of reverse, see No. 7*)

47. Other data concerning this patient:
  See also.....Clinic Card No.....
  See also Special Exam. Serial Card No. .....

eye, which it is quite important to differentiate, may be said to be four, namely:

1. Those which have to do with the conjunctiva;
2. Those which deal with the cornea;
3. Those which deal with the iris;
4. Those which deal with the tension of the eye.

The differential diagnosis will concern itself therefore largely with a judgment as to whether the inflamed condition is a conjunctivitis, a keratitis, an iritis, or a glaucoma. In addition to the above four major groups, the following special conditions might also be remembered:

A. If the orbital tissues are especially injured, we may have to consider also a traumatic or infective cellulitis.

B. As regards injuries, there may be trauma to any of the tunics previously mentioned, so that here we can deal with traumatic infections of the conjunctiva, cornea, iris, and other tissues; and these may vary all the way from simple mechanical inflammations to an infection that can present the picture of a panophthalmitis.

C. The comparatively mild inflammation associated with lid conditions, such as an occluded Meibomian gland (chalazion); an infected eyelash follicle (hordeolum or stye); and the irritation due to malposed eyelashes (trichiasis), must also be remembered.

D. With the comparatively infrequent inflammations of the sclera, this paper will not concern itself, for as stated before, the particular and more important conditions to be differentiated, are the various forms of acute conjunctivitis, acute iritis, keratitis, and the acute glaucoma.

In making the differential diagnosis of these conditions, the facts noted on the history card which has been passed to you, will give most of the data that is necessary. In the consideration of the facts there noted, the following additional differential points may be kept in mind.

Tension. Glaucoma shows the increased tension, and, therefore, in making your examination, it is well to take this tension through the gently closed lids by palpation; or if you wish to be more exact, with the instrument known as the tonometer. The tension is not changed in conjunctivitis, or in keratitis, and only occasionally to a slight extent in iritis. Glaucoma is most frequently found in patients past the age of forty.

Pain. In all these acute inflammations, there is pain; that in conjunctivitis being least, the condition there being more one of discomfort, with smarting of lids, of a feeling of sand and of foreign substances. The combinations of sharp and spasmodic pain in a tender eyeball (usually worse at night), is the type usually associated with iritis. The glaucoma pain, while extreme at times, does not as a rule increase at night. In the corneal inflammations, the globe is usually not so tender, nor is the pain so severe as in glaucoma or iritis.

Secretion. The many glands of the conjunctiva make for an increased secretion when that tissue is inflamed, and consequently the lids are more apt to be sticking together in the morning, in conjunctivitis. In the other conditions, the secretion of mucous in not so great, although in the inflammations of the cornea, the increased lacrimation is apt to be marked.

Vision. The vision would naturally not be much affected in simple inflammation of the lids; but in glaucoma, there may be a sharp and early decrease; while in iritis, the diminution is usually less and generally more gradual. In the corneal inflammations, the diminution of vision depends largely upon the amount of turbidity of the cornea and aqueous.

Vascular Changes. The vascular changes are a picture somewhat of the blood supply to the regions specially involved, the injection in the different kinds of conjunctivitis showing superficial blood vessels that are movable with the conjunctiva; the greatest amount of injection being on the lids, and being less as one approaches the edges of the cornea. In iritis and keratitis, the sclerocorneal region usually shows marked vascular injection, the color in iritis being reddish, while in keratitis there is more of a pinkish hue, the vessels breaking up into a little network outside the limbus.

Photophobia. As regards the patient's dread of light, the greatest amount of photophobia is seen in the corneal inflammations, the amount of photophobia being quite slight in the other conditions.

Corneal Sensitiveness. If the cornea be touched with a small brush of cotton on the end of a toothpick, there can usually be determined a diminution of sensitiveness in the glaucoma, while in keratitis, the sensitiveness is apt to be increased.

In the above we have been dealing largely with symptoms and general signs. When we begin to consider the individual eye tunics themselves, we can note among other factors, the following:

Conjunctiva. The conjunctiva is naturally involved in a conjunctivitis, and when the inner aspect of the lid is examined, it is usually seen to be quite red and swollen; but in glaucoma there is no change of any special note, nor much in keratitis; and only in iritis are we apt to find any thickening of the conjunctiva, and that usually not much.

Translucency of Cornea. A localized or general change in the translucency of the cornea may be noted in a keratitis, and in a glaucoma there may be a steaminess; while in iritis there will be less change in the cornea, unless of a secondary involvement.

Anterior Chamber. The anterior chamber is practically normal in these four diseases, except in glaucoma, when its depth becomes decreased because of the pushing forward of the iris and lens.

Iris. The iris shows its greatest change in iritis, losing its gloss somewhat, and being either discolored or swollen. In the corneal and conjunctival affections, there is no special change in the iris; but in an acute glaucoma, the iris markings may be less sharp.

Pupil. The pupil in conjunctival and corneal infections remains practically normal, but in iritis usually a small pupil is met with, which responds

sluggishly or not at all to light, and which may have an irregular form if adhesions be present. In glaucoma, on the other hand, the pupil is usually dilated, but here also its response is slow, and the pupillary area is furthermore apt to take on a greenish color.

IN CONCLUSION.

This concludes the consideration of the factors which are usually taken into account in making the differential diagnosis in the four major types of inflammation we have been discussing, namely in acute conjunctivitis, iritis, keratitis, and glaucoma.

It need hardly be emphasized that an exact diagnosis is of special significance when we deal with iritis and glaucoma, because the therapeutic indications are not only virtually opposite, but if the proper medications of the one are used for the other, the results are apt to lead to grave consequences; for in iritis, while atropin is a great standby, both in the relief of pain and in resolution of the disease process, this same atropin, when used in a case of glaucoma, will help increase the pain and may do irreparable injury to the sight.

Lack of time prevents the discussion of further differential points involved in the various types of conjunctivitis, such as the simple follicular, the phlyctenular, the purulent, and the trachomatous types; nor can we discuss here the various forms of iritis, keratitis, and glaucoma.

It is hoped, however, that what has been presented may be of some service to you who are general practitioners in giving you a brief resurvey of some of the conditions that you not infrequently meet with in your own practice, and which you are often either called upon to treat, or to refer to some ophthalmologist.

OPERATIVE PROCEDURES OF OCULAR MUSCLES IN HETEROPHORIAS.*

By E. W. ALEXANDER, B. S., M. D., San Francisco.

When is one justified in resorting to surgical methods of treatment in heterophoria and what surgical procedure should be used? I have not selected this subject with the expectation of presenting anything original, but in the hope of stimulating a discussion on a rational treatment of a decidedly distressing condition, which receives very scanty or disjointed consideration by many ophthalmologists. The subject is a very large one and has been freely treated in magazines and monographs, sometimes requiring several volumes. Therefore I will proceed directly to the discussion of concrete examples rather than to the review of the text, with which you are familiar.

Case 1. A young woman with exophoria complained of the usual symptoms of frontal to occipital headache, "pulling" sensation in the eyes during accomidation, dizziness, nausea, etc.

Examination showed O. D. V. w—0.37=+0.62 x 100 =6/6+; O. S. V. w—0.37=+0.75 x 85=6/5. Screen test, divergent tendency. Phorometer, Exophoria 4°—6°; adduction 6°; abduction 8°.

The patient's mother had had ten or twelve operations, consisting of snipping one or more muscles, until the symptoms were relieved, for a similar condition. The same program had been advised for the daughter without preliminary cycloplegic refraction or treatment.

This case is clearly one of insufficiency of the internal recti, either due to intrinsic muscular power, or to one of those subtle co-ordinative functions of the motor nerves. In the latter event educational and other types of exercises should be taken up, together with an exhaustive search for a source of reflex irritation. This is beyond the scope of my paper. Taking for granted that the case quoted is one of intrinsic muscular insufficiency, it is perfectly clear that the only type of operation which could be utilized would be some sort of advancement, and not "nicking."

Any way of giving increased mechanical advantage which suits the fancy of the surgeon could be used; either tucking, shortening or advancement. I can highly recommend the advancement operation described by Dr. V. H. Hulen on account of the accuracy and stability of the scleral stitch and the advantage gained by the method of traction when tieing the sutures. However, such cases respond very well to exercises with prisms and to gymnastics. It has been my practice to give printed instructions covering such details as illumination of the room; regulation of distance from candle; posture of head; position of prism, etc. Also it is wise to inform the patient at the start that the development of muscular strength and co-ordination is educational as well as anatomical and will necessarily be tedious. Over-correction is necessary because there will be a slump in converging efficiency after the exercises are discontinued.

Except in presbyopia, incorporation of prisms in the correcting lenses in exophoria is not satisfactory in the long run. An exception to this fact is found in neurotic individuals with only a few degrees of exophoria.

Case 2. Patient complains of usual symptoms of lack of muscular equilibrium.

Examination: Vision normal with following correction: O. D.+0.12=+0.25 x 25; O. S.+0.25=+0.25 x 180. Phorometer showed Exophoria 7°; right hyperphoria 1°; adduction 6°; abduction 13.°. After exercises and gymnastics, adduction 20°, abduction 14°.

As has been the rule in cases of exophoria due to abnormally strong external recti, exercises and incorporation of prisms in the position of rest in her lenses did not relieve the intense "drawing" in the neck and eyes, occasional transitory attacks of diplopia, etc. Therefore I did a complete central tenotomy of the external rectus, reducing the exophoria to 2° where comfort was maintained by occasional periods of exercises.

In any case where there are transitory attacks of diplopia, one is justified in informing the patient in the beginning that nothing short of operation will give them ocular comfort. I have found, however, that an operation is necessary sooner or later in all young adults with 4° or 5° or more of this type of exophoria.

I feel that the proper routine to follow in these conditions, after failure with exercises and other conservative treatment, is to measure the actual turning or version power of the individual muscles with Stephens' tropometer. The normal is outward and inward 48°—53°, upward 33°, downward 50°. If the degree of exophoria is explained by a too strong version of the external rectus and

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

normal version of the internal rectus combined with unusually strong abduction, operation should not be delayed. If the version does not corroborate the duction test, one should suspect a pure co-ordinative factor induced possibly by an error of refraction which has not been revealed by homatropine cycloplegia. In the latter event we should proceed to a complete cycloplegia with atropine. If any additional data is found in the refraction, new glasses should be prescribed. Finally, operation is indicated in the presence of continued symptoms and signs of heterophoria.

All kinds of partial tenotomies, nicking of the tendons and bizarre incisions are recommended. I can understand that occasionally where a neurotic patient with one or two degrees of exophoria becomes worn out with conservative treatment, a partial tenotomy may be all that is necessary. I believe that cramp of the muscles may be permanently relieved by such a procedure, but a persistent exophoria of 4° or more, especially with a strong version, requires a complete tenotomy. It is certainly more satisfactory from the patient's standpoint, and can be kept under complete control by the use of the Maddox rod or phorometer at the time of operation. In fact, I always control the extent of change in muscular version power by the Maddox rod during the operation.

Case 3. A well developed and healthy young woman found it impossible to do any reading and necessary to give up music and all near work on account of vertigo, nausea, headache, etc.

Examination showed: Normal vision with O. D. —1.00=—0.25 x 180; O. S.—0.75=—0.25 x 180. Phorometer 7° left hyperphoria; phorometer 3° exophoria. Tropometer normal for right eye. Left eye upward 50° instead of 33° and downward 45° instead of 50°. The first tenotomy reduced the hyperphoria to 4° after a few months' interval, and a second operation became necessary, after which her symptoms disappeared.

I have found more satisfaction in my operations of heterophorias of the vertical muscles than of the horizontal recti. The symptoms are more intense and the results are more liable to be permanent. Hyperphoria does not respond at all well to exercises, but is helped very much by incorporations of prisms in the glasses if the amount of error is below two or three degrees. One of my cases did very well with the aid of prisms for two years, but as soon as she took a position requiring a trying and unusual position of her head, all her symptoms returned with increased intensity. With the loss of weight and sleep, and her intense headaches, she was soon unfit for any occupation. All was remedied by an operative procedure.

I do not recommend operations on the obliques. Such cases must be corrected by operative or other treatment of the recti.

One must bear in mind the general physical condition of the patient, especially in regard to the nervous system. Unusual strain on the ocular muscles, hysteria, various constitutional states and periods (such as the menopause), may result in ocular spasm and heterophoria. Too great enthusiasm in the treatment of a local condition will therefore occasionally lead to grief, unless we have made an exhaustive search for reflex irritation and depression.

The practice of doing "partial" tenotomies on any considerable percentage of heterophoric eyes shows very poor surgical judgment; and daily treatment of patients in the office with prisms means commercialism of a malignant type.

CONSERVATIVE MANAGEMENT OF THE HANDICAPPED GYNECOLOGICAL PATIENT (ANOCI-ASSOCIATION).*

By THOMAS O. BURGER, M. D., San Diego.

While woman is in many ways superior to man, in endurance, fortitude, and tenacity, yet we know that as a rule her nervous system is more sensitive, her susceptibility to nervous stimuli more acute, shock in her more easily produced and in many other ways she is less stable than man.

Animals are transformers of energy and in the human it is the female that is more acutely activated and reacts to stimuli more easily and profoundly than the male, discharging energy, motor or emotional, more rapidly, also having less power to put on the brakes, or in other words her governor is not so satisfactory as that of her brother. This is as was intended and is no reflection on woman, as her sexual system influences her entire makeup to a great extent. Especially is this so at certain periods of her life, viz.: puberty, menstruation, pregnancy, parturition, and the menopause, all these affecting more or less her nervous system, through or independently of her internal secretions, notably her thyroids, hypophysis and adrenals.

We are all aware of the deleterious effect on the whole, of shock, profound noxious impressions, dread and worry; any or all of these are more serious in their effects on woman than on man; and appear to influence the various glands, especially the thyroid, most profoundly in the female.

Every woman coming as a patient who is below par has more or less disturbance of her nervous system, some much more than others. Also, with possibly a disturbance of her internal secretions, due to past anxiety and other conditions, she is most sure to have a disturbed cardiovascular system, may be hypertension, or if perchance a low vitality or hemorrhages will more often have hypotension. It is this class of women with the low state of resistance, ones easily influenced by noxious impressions, with low blood pressure, subjects that would undergo ordeals badly, stand shock poorly, and are good subjects for permanent neurasthenia that I am especially pleading for in this paper.

To begin with, the diagnostician, be he gynecologist or general man, should be considerate of this class, always on the alert not to add insult to injury in his examination by producing a bad psychological effect, shocking the nerves and ductless glands and still further paving the way for a permanent neurasthenic invalid. Much can often be done in a conservative way to make these

* Read before the San Diego County Medical Society, Sept. 15, 1914.

patients more comfortable if not well, and often the neurologist with his abundance of assuring suggestive therapy can avail more than the ultra gynecologist. This class of women in their low vitality, whose conditions demand surgery, and knowing as they do of their handicapped condition have still more reason to dread surgery as they have known it practiced. Can we offer them an improved process? I answer yes, and not in an untried theory, either. Then if we can truly offer something better, will not more of them submit to what is demanded for life and health? By relieving them of the dread of disaster, as well as the harshness and terrors of the operation, and also assurance that the days following will be less distressing, will they not also be in a much better psychological as well as physical condition to undergo the ordeal?

The improved conservative process and main idea in this paper is Crile's anoci-association, which you are all more or less familiar with. To those of you who have seen Crile work and followed up some of his patients or have carried out the complete plan, it needs no commendation.

The many little details before, during, and following operations done by this plan would more than fill a lengthy paper, so I will only speak of the four cardinal principles used in anoci-association. They are preliminary preparations, nitrous oxide oxygen anesthetic, blocking the area of incision with a local anesthetic, and the use of a prolonged local anesthetic when finishing.

The first principle is to get the patient in a tranquil attitude by assurance, in offering a safer and easier plan, and also giving, hypodermically, morphin 1/6 scopolamin 1/150 gr. one hour before starting gas to get "twilight sleep."

For the second principle, the nitrous oxide and oxygen anesthesia, I will read a paper I prepared and read before the Mid. Tennessee Medical Association two years ago, which is still with very little change my views at present.

"With the present improved operative technic and low mortality, the laity are not so much concerned about the surgery proper as with the being put to sleep and the awful sickness following. It is due them the saving of this if possible, and it is within our power to prevent this unpleasantness, both during and following the administration of anesthetics by the use of nitrous oxide and oxygen. Nitrous oxide and oxygen have unquestionably been proven to be the quickest, safest, most pleasant to take, and of least injury to the patient in after-effects of any known anesthetic.

Nitrous oxide was first administered as an anesthetic by Horace Wells, a dentist of Hartford, Conn., in 1844, and has been used intermittently since, dentists making use of it more frequently than physicians. Therefore, to the dentist we owe more of its perfected technic in administration. To Dr. Crile and the dentist, Dr. Teter, of Cleveland, O., must be given the credit for the prominent place nitrous oxide and oxygen have taken as an anesthetic.

A number of surgeons have made use of it for varying periods of time, and abandoned its use, giving as their reason a number of little hindrances, such as the cumbersomeness of the apparatus for giving, the necessity of a specially trained anesthetist, the cost of the apparatus and cost of gas, and also the fact that a few patients will not take it well, or will not become sufficiently relaxed for some surgical procedures. Another reason—and, to be sure, a good one—is the tendency of surgeons to simplify operative procedures as much as possible. It is a fact that the proper giving of gas involves considerable ceremony or formalities.

Ether is the choice of many of the best surgeons of today, and is a relatively safe and easily administered anesthetic, therefore the one to always be chosen, unless all the requirements for a gas administration are at hand. Ether, given as it is in the larger clinics, by specially trained members of the staff, is used with a very low mortality, but universally with more or less post-anesthetic objections.

ESSENTIALS TO A PROPERLY GIVEN NITROUS OXIDE AND OXYGEN ANESTHESIA.

First. In the giving of any anesthesia an air of confidence is of inestimable worth, and it is certainly very much easier obtained if the patient knows that only gas is to be administered. This confidence not only makes the patient much more easily anesthetized, but lessens the fear, and, as Crile has well shown, eliminates a great deal of actual injury to the brain and nervous system, thus saving the patient much of the nervousness following the operation.

Second. An anesthetist who is thoroughly familiar with the apparatus, the action of the agents used, and one who is interested in this anesthetic.

Third. An improved or modern apparatus with all the attachments, especially the large cylinders and pressure gages, that a steady, continuous flow of both gas and oxygen may be obtained.

Fourth. The giving of morphine and scopolamin about an hour before the beginning of anesthesia.

In our work we have used the Teter apparatus, with all the accessories, in all major surgery, and have found it entirely satisfactory in every instance, though occasionally we do use some ether through the attachment provided for that purpose. However, in a number of the more prolonged laparotomies we never resort to the ether at all. If ether is used in this way, we do not get the unpleasant ether nausea and kidney irritation as when straight ether is used throughout. The warming of the gases for inhalation is obviously of great advantage to the patient, requiring a less amount and less danger of pneumonia or respiratory irritation.

DISADVANTAGES OF OR OBJECTIONS TO THE USE OF NITROUS OXIDE AND OXYGEN.

First. It requires a rather expensive and cumbersome outfit.

Second. Requires a more expert, attentive and specially trained anesthetist.

Third. Is more expensive, costing from $3 to $6 per hour for gas, unless considerable re-breath-

ing is resorted to, which, however, is very desirable in some instances.

Fourth. An occasional failure to get thorough relaxation, and a few idiosyncrasies. One of our cases, an asthmatic, would not go under it until ether was used to get thorough relaxation, after which a difficult hysterectomy was performed with perfect relaxation, using only nitrous oxide and oxygen. Children with obstructed nasal respiration from adenoids have not taken it kindly.

Fifth. It is not the anesthetic of choice unless a trained anesthetist gives it.

ADVANTAGES OVER OTHER ANESTHETICS.

It is unquestionably the safest known anesthetic, if all the requirements are fulfilled.

It is certainly more pleasant to take, as it is free from the excitement of "going under" and in "coming out."

The post-operative nausea and vomiting that it frees the patient from alone, if all other things were equal, should decide in favor of this anesthetic. However, a few will vomit after the operation from the manipulation, the psychic effect, the morphine, and a few from the gas, but this is very infrequent.

Shock is not produced as with ether or chloroform, and Crile states that patients will endure four times more trauma under gas than under ether.

The effect on the blood, as has been shown, is very greatly in favor of this over any other anesthetic, chloroform producing much more destruction of the blood cells and phagocytes, ether next, and gas least, if any at all. That patients are able to withstand more infection and recover more promptly and perfectly after gas than after ether has been demonstrated by scientific observers.

When given with plenty of oxygen, patients may be kept under it longer and recover from it more surely than with ether, even though this is supposed to be an anesthetic for short procedures only. It has been our observation in our own use and at the larger clinics that after a period of ten minutes' administration patients take it more perfectly and it is much more easily controlled.

As before stated, some of the leading surgeons today are using ether as a routine after having tried gas for a while, and the hindrances enumerated are, to our minds, small as compared with the safety and especially the comfort of our patients. We have mentioned Crile more than once. All of us, we think, admit that he has done more for the comfort of the patient than any other living surgeon. However, as he states, it requires much more of the surgeon's energy and time. Crile also shows as low mortality as is seen in any clinics.

Ether given by a trained anesthetist, as is seen at the Mayo's or at Bevan's clinic, is very fascinating, especially after having seen it given by internes or the untrained. Yet the patient is sure to have the post-anesthetic nausea and vomiting, the certain amount of kidney sequelae and more neurasthenia than we have when gas is given. A patient who has once taken ether and remembers the unpleasantness is always a welcome recipient of gas if another operation is to be undergone.

The third cardinal principle in this plan of surgical conservatism is the use of a local anesthetic to prevent any painful or shocking impressions reaching the central nervous system from the traumatized area. To obtain this, as soon as patient is under gas the skin and all other structures to be incised are infiltrated with 1/400 novocain solution. Making pressure over area with hand will cause an immediate effect of the drug. This part should be done as thoroughly as if the operation was being done under a local altogether, to get the best effect. It is admitted that this takes a little time, but time is not such a factor as it is when your process is shocking the patient as with the straight ether method. The solution and syringe can be sterilized as thoroughly as any other instruments or solution and consequently no more danger of infection. Thorough use of this part of the procedure insures relaxation that at one time was held against gas for abdominal work.

The fourth, last and least in importance of these principles is the use of quinine and urea hydrochloride in the edges of wound for its prolonged anesthetic effect, which lasts from 24 to 72 hours. There is a prevalent fear that this drug is dangerous in one way or another, but in quite an extensive use I have no cause to be afraid of it.

Avoid rough handling of tissues, cutting rather than tearing is essential for the patient's well-being, and as before stated I am not going into the minutiae or logic of anoci-association, but approaching it from the angle of the handicapped gynecological patient. In all surgery, even that on the sane, robust man better results and ever so much more comfort are obtained by this method.

One illustration of the beautiful and beneficial results of this over the usual ether method is in cancer of the uterus, where the woman has lost blood heavily; give gas and cauterize cervix, and with cautery proceed as if doing a vaginal hysterectomy, pack with alcohol gauze and the next day complete the hysterectomy by the abdominal route using the full novicanization except where there might be danger of cancer cells being implanted by the needle. By using this plan you can have a two stage procedure that will not be possible on consecutive days in many instances with ether as the anesthetic.

My individual feeling toward this process after more than three years' continued use of nitrous oxide oxygen anesthesia and more than one year's use of the complete anoci-association in all surgical procedures in gynecological and general surgery is well told in the words of Bloodgood of Johns Hopkins, who says, "From my observations I am convinced that any operation performed under this anesthesia (anoci-association) properly carried out will result in less shock, the post operative discomfort and complications will be greatly reduced; the period of disability very much shortened; all this has certainly been accomplished in my own experience. And I think I have convinced my associates, both surgeons and nurses, that this

method has great advantage over ether. I am also convinced that no operating surgeon will come to the same conclusions until he has faithfully given this method a fair trial over a considerable period of time."

To summarize, what can we offer our handicapped gynecological patient demanding surgery? An improved process carrying with it less fear, a more safe and pleasant anesthetic, absence of prolonged unconsciousness and vomiting in practically all cases. Freedom of sequelæ as related to the kidney, lungs, blood and nervous system, meaning *less morbidity* and *less mortality*.

A REPORT ON EHRLICH'S ALDEHYDE TEST FOR UROBILINOGEN.

(From the West Medical Service, Massachusetts General Hospital, Dr. Richard C. Cabot, Chief of Service.)
By OSWALD H. ROBERTSON, M. S., Boston, Mass.

From recent communications on the subject it is apparent that there is still a good deal of uncertainty over the exact significance of urobilinogen in the urine. Some clinicians consider a positive test strong evidence in favor of a pathological condition of the liver; many others find very little value in it as an aid to diagnosis. This same divergence of opinion exists at the Massachusetts General Hospital where the test has been done during the past year on all West Medical cases at admission. Something over one thousand single tests have been made. In order to determine if possible what the test really meant, all cases showing a positive test were collected and classified according to disease process, noting its relation, if any, to possible liver involvement.

As the theories of urobilinogen physiology with their accompanying experimental data have been so thoroughly reviewed by several writers in this country (e. g. by Wilbur and Addis [1], Comer and Roper [2], and Berghausen [3],) they will not be mentioned here. While much work has been done to determine the origin of urobilinogen, there is very little in the literature on the practical value of determining its presence in the urine in routine clinical work. Some men, as for instance Munzer [4], take the extreme view and assert that urobilinogen in the urine indicates actual disease of the liver cells. Others, and they form the great majority, believe that it simply means a diminished functional activity of the liver, which may be caused in many ways. And again, there are a few, as Wilbur and Addis, who consider that in the presence of severe anemias and large hemorrhagic exudates, the liver may have very little to do with the appearance of urobilinogen, i. e. that it may come directly from the breaking down of blood pigments. But just how much weight can be placed on a positive or a negative test in any given case seems very uncertain. Hildebrandt [5], in his last report, states that the test is of little practical value. He does not, however, give any figures.

The following table contains only the cases showing a positive test. Negative tests will be discussed later. The technic employed in doing the tests is practically the same as that described by all who are using it and is given here in detail simply as a control on the accuracy of the conclusions to be drawn from the following series of cases: To 3 or 4 c. c. of fresh urine in a small calibre test-tube, 3 drops of Ehrlich's reagent-dimethylparamidobenzaldehyde are added. A positive test consists of a cherry-red color appearing as a band at the upper part, or diffusely through the urine. The color may appear immediately or in from five to fifteen minutes, depending on the concentration of the urobilinogen present. Stress is laid on the definite cherry-red color; there are shades of yellowish brown, due to pigments in the urine, which may lead to misinterpretation. Again the test must be read by transmitted and not reflected light.

TABLE.

		No. of cases.	
Acute Infectious Processes.	Pneumonia	15	
	Tonsillitis	5	
	Arthritis	3	
	Influenza	1	
	Pharyngitis	1	
	Unknown Cause	1	
		— 26	
Cardiac Disease.	With Decomposition and Passive Congestion of Liver	18	
Liver Disease.	Syphilis	5	
	Malignant	4	
	Gall Stones	3	
	Catarrhal Jaundice	2	82
	Cirrhosis	1	
	Myeloid Disease	1	
	Enlarged? cause	1	
		— 17	
Blood Diseases and Conditions.	Primary Anaemia	3	
	Secondary Anaemia	3	
	Banti's Disease	1	
	Malaria	4	
		— 11	
Malignant of abdomen (probably with liver involvement)		6	
Typhoid Fever		3	
Alcoholism (bile in urine)		1	
Tuberculous Peritonitis		2	
Tertiary Syphilis		2	
Duodenal Ulcer		2	
Tuberculous Pleuritis		2	
Cardiac Disease (without decompensation)		1	
Mediastinal Tumor		1	
Pulmonary and Renal Tuberculosis		1	18
Empyema (residual)		1	
Ovarian Cyst		1	
Gout and Obesity		1	
Pellagra		1	
Traumatic Neurosis		1	
Addison's Disease		1	
Plumbism		1	
			100

The large bracket includes all those cases, eighty-two out of the one hundred, in which there is considered to be a diminished liver function, brought about either directly or indirectly by the disease process present. Under "direct causes" of hepatic insufficiency may be classed the actual liver diseases, the cases of malignant disease of the abdomen, all of which showed probable liver involvement either by an enlarged liver or bile in the urine, and possibly the case of alcoholism as it showed bile in the urine; twenty-four in all. Under "indirect causes" come conditions not primarily in the liver, i. e., the infectious processes, passively congested livers, the anemias and malaria. In the acute infections comprising the largest single group, a positive reaction can be explained by supposing an injury to liver cells, due to the accompanying toxemia. This is comparable to the judgment that the appearance of casts and blood in the urine in acute febrile conditions is evidence of temporary kidney damage. The three cases of typhoid which cannot be

classed as acute infections are, however, bracketed with those already mentioned, because they represent conditions accompanied by toxemia. Blood diseases and malaria (in which there is considerable breaking down of red cells) are assumed to be related to hepatic insufficiency because we may presume that there is an overloading of the liver with blood pigments. However, these diseases might also be put in a group by themselves as direct causes of a urobilinogenuria in which the liver plays no part. The cardiac cases with passive congestion of the liver are self-explanatory. This second group, positive reactions without organic liver disease, includes fifty-eight cases.

The small bracket contains eighteen cases in which no possible relation to liver involvement could be found. There was no liver enlargement, jaundice, or bile in the urine, nor was there any condition apparent which could produce an increase of circulating urobilinogen. The liver edge was felt in the Addison's disease, but could be accounted for by the extreme emaciation present. In the case of lead poisoning which showed no anemia, there was, however, marked constipation. It is reasonable to suppose that a larger amount of urobilinogen than normal is absorbed from the intestine in cases of marked constipation and certain writers assert that it may appear in the urine in this condition. But the fact that this was *the only positive test* out of a very large number of cases of marked constipation, makes constipation improbable as a cause for urobilinogen in the urine. The toxic action of lead on the liver cells might explain the urobilinogen here, yet the evidence is not strong enough to take the case out of this unexplained group.

We may fairly conclude, I believe, from the table, that eighty-two per cent. of the positive tests were associated with decreased liver function from some cause. But despite these results, certain things must be taken into consideration before any conclusions about the liver can be drawn from a positive test in any given case.

First, general conditions, such as acute infection, blood diseases, and passive congestion of the liver, must be excluded. This comprises fifty-eight per cent. There remain forty-two per cent. of positives, twenty-four of which, or fifty-seven per cent., can be tabulated as indicating actual liver disease, while the remaining eighteen, or forty-three per cent., appear to have no connection whatever with the liver. Where an attempt is being made to differentiate between disease of the liver and disease of some other organ, a positive test indicates liver disease only about sixty per cent. of the time, and therefore, cannot be of much value.

It is impossible to analyze in this way, the two series of cases given by Eustis[6] and Bergharsen because only the diagnoses are given, and in those cases which apparently have no relation to liver function, it is not stated whether there are any signs of liver involvement or not. But grouping them as they are given, the ratio of positive tests in cases of actual liver disease to positive tests in cases having no apparent relation to liver function (pulmonary tuberculosis, chronic nephritis, etc.) is under forty per cent. instead of sixty per cent. in the table above. In this, showing the test is of even less value than in my figures.

In the literature striking differential diagnoses (e. g., a question between gall bladder disease and appendicitis, or gall bladder disease and duodenal ulcer) have been made on a positive urobilinogen test which was borne out by operation or autopsy. But these diagnoses seem to be largely a matter of chance. Even in cases of common duct obstruction, the persistence of a positive test cannot be taken to prove conclusively that the obstruction is incomplete, for in certain liver conditions, demonstrated so well by Fishler[7] in his experiments on dogs with biliary fistulae, urobilin and urobilinogen may be formed in the liver itself. Simon[8] thinks that a positive test is of value in differentiating abdominal symptoms due to an organic cause from those of purely nervous origin, as the latter never gives a positive test.

Of course, we cannot say, of the eighteen cases included in the small bracket, that there was no disturbance of liver function, merely because none of them showed the grosser manifestations of hepatic injury such as jaundice, enlarged liver, etc. But granted that there was disturbed liver function here, would not the great diversity of conditions in this group show that the test was too sensitive for practical purposes?

What is the value of a negative test in helping to exclude liver disease? One way of getting at an answer to this question is to ascertain whether the test is constantly present in a series of cases with a definite organic liver lesion. To this end, fifteen cases of cirrhosis were collected. Out of this number eleven, or seventy-three per cent., showed a positive test. Some of these cases showed at one admission to the wards a positive test, and at the next a negative. In a few, tests were done several days in succession; one day the test would be positive and the next negative without any apparent change in condition of the patient.

This brings in a complicating factor, namely, that one negative test is not conclusive. Apparently the conditions resemble very much certain cases of chronic nephritis in which it is necessary to test the urine repeatedly before evidence of kidney pathology is found. This point, it seems to the writer of considerable importance, has been very little emphasized in the literature. In view of this, it is not unlikely that all the fifteen cases would have shown a positive test at one time or another, had several tests on successive days been done on each.

Fishler[9] says that in his long series of cirrhosis cases he always obtained a positive test. On the contrary various other writers state that the test is not constant in liver conditions such as cirrhosis where one would most expect it. But no one says how many tests were done on each case.

From the comparative infrequency with which bile appears in the urine in such a marked lesion as cirrhosis—only in twenty per cent. of the above series—it is possible that the appearance of urobilinogen, although a much more sensitive test of

liver disorder, still may be subject to the same fluctuations as those governing the appearance of bile in the urine. Again there were in my series a number of cardiac cases with marked passive congestion of the liver which gave negative tests. A good deal of light has been thrown on this subject by the recent work of Wilbur and Addis on the quantitative estimation of urobilin in the urine in certain pathological liver conditions. They found that the output of urobilin varied largely from day to day and even from hour to hour in the same case.

Therefore, from the data given above and from the results of other investigators, a negative test cannot be said to rule out liver disease. The only way to determine this accurately is by doing repeated tests in a large number of cases of actual liver pathology, not only cirrhosis but also malignant disease of the liver, syphilis of the liver, etc., in order to find what proportion give a positive test at some time during their course, and how many negative tests are necessary on the average to exclude the possibility of a positive.

On the strength of the above findings, the test has been discontinued in the routine examination of admission urines on the West Medical Service at the Massachusetts General Hospital.

RESULTS.

It seems fair to draw the following conclusions:

1. A positive test is of very little value on account of the fact that it appears in such a relatively large number of conditions having no apparent relation to liver function.

2. One negative test does not rule out the possibility of a positive test appearing later on.

3. A persistently negative test is of more value than a positive but in view of the lack of clinical data, it cannot be said to exclude a pathological liver condition.

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CONCERNING THE ETIOLOGY AND TREATMENT OF SUPERFLUOUS HAIR.

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The question of superfluous hair is important, and there is more to it than eradication alone. Prevention should also be considered, and it is here that the physician with his knowledge of physiology and with the conditions under which hair is stimulated to grow, may give valuable advice that lifts him above being a mere technician. Definite directions may be given in that large class of cases in which constitutional disturbances tend to stimulate the growth of hair. The laity often imagine that the facial creams and ointments used in seborrhea and acne stimulate the growth of hair, when it is really the condition of the skin itself that is responsible for the hypertrichosis. In fact several factors may conjoin to this end. For instance, many of the patients applying for treatment of overgrowth of hair on the face are in early adult life, and therefore at an age when the pilosebaceous system, whether in the male or in the female, is especially active, and then, as before indicated, seborrhea, a condition in which the pilo-sebaceous system is still further stimulated, may also supervene. The etiology of the latter is most intricate. Seborrhea is a condition of the skin dependent for the most part on the action of toxines developed in the alimentary canal. Almost all these toxines are vaso-dilators, and they dilate the blood vessels and stimulate the glandular system of the face, probably in the same way that alcohol does. Certain classes of food also tend to produce seborrhea. For instance, milk fat is a sebeogogue, but sugar is a much stronger one, and alcohol is still more active in this direction. Furthermore, if milk fat and sugar are taken only in normal quantity and the oxygen intake is low, as in sedentary life or in anemia, the fat and sugar are not burnt, but are shunted as fat into the fat repositories, of which one of the greatest is the skin, and there they may give rise to seborrhea. Therefore, adolescence, anemia, gastro-intestinal intoxication, and the ingestion of sebeogogic foods may all conjoin to produce a greasy skin in which the growth of hair is highly stimulated. Sometimes this stimulation is remarkable, and results in a thick, rapidly growing coat of hair. On the scalp this overproduction is regularly followed by a correspondingly rapid fall. On the face the fall is not so apt to occur. It is not, therefore, the facial creams that the patient uses, but the facial oil and its concomitants that the patient herself elaborates, that often conduce to an overgrowth of hair.

One other observation worth recording is that almost all the seborrheics who have an increased growth of hair on the face have congested skins, and frequently hyperidrosis of the palms and soles. The peripheral arterioles are so full that pressure will produce blanching distinctly outlined with reddened borders, the color returning slowly. This congestion is often well marked in the face, and seems to be intimately associated with the seborrhea, and with the stimulation of the growth of hair. This congested skin is a symptom resulting from the action of toxines, probably developed in the alimentary canal, which, as before mentioned, are almost all vasodilators.

Among etiological factors in the production of superfluous hair as given by Baum, are uterine displacement with dysmenorrhea, diabetes, toxemias and seborrhea.[1] He states that associated with hypertrichosis, indican is almost constantly present in the urine. He cites an instance occurring after acute flexion of the uterus, and disappearing after correction with return of normal menstruation, and another instance of the disappearance of superfluous hair from the upper lip and chin of a woman two years after marriage, and after the

birth of a child. I have never seen a case in which I could be positive there had been a spontaneous disappearance of the superfluous hair, but I can readily believe a spontaneous disappearance possible.

Baum's observations are very interesting and well worth careful consideration. Uterine displacement with dysmenorrhea may influence the growth of hair on the face in several ways. Often constipation is a result of the displacement, producing toxemia, which in turn causes seborrhea; all the gastro-intestinal functions may be disturbed through the effect of the displaced uterus upon the sympathetic nervous system; the greater congestion produced in the ovaries may influence faultily their internal secretion, and this in its influence upon the vaso-motor system may stimulate the growth of hair. Just what effect the internal secretion of the ovaries has upon the skin and upon the hair we do not know, but we do know there are many changes brought about in the skin and the hair by disturbances in the internal secretions of the ductless glands, especially the thyroid and the hypophysis.

Diabetes is a complex condition which definitely shows a faulty carbohydrate metabolism. It is quite a common thing to find sugar in the urine of seborrheic patients, either indicative of diabetes or of simple glycosuria. As stated before, sugar, as the type of the most easily assimilable carbohydrates, acts, in excess, as a distinct sebeogogue, and it would have a more marked effect in those patients in whom the carbohydrate metabolism is so imperfect as to permit glycosuria, or in whom there are such pathologic conditions as produce the symptom complex of diabetes.

The toxemias whether of a chronic nature, such as tuberculosis, or of an autotoxic character emanating from the alimentary canal have, as before mentioned, a marked influence upon the vaso-motor system and upon the body envelope in a general way and cause seborrhea.

Recently a young woman, twenty-two years old, came to me with acne and hypertrichosis. Her acne began six months before, at which time she noticed a much greater oiliness of the face and scalp. During the six months, the hair had grown in some places on the face to an inch in length. Her case was interesting because she had refrained strictly from using any facial application, greasy or otherwise, for the sole reason that she always had a dread of hairs on the face. She had formerly led an outdoor life, but for nearly a year had been doing desk work and living in a boarding house. Constipation and gastro-intestinal distubances resulted. Another patient with deep indurated acne, seborrhea of the scalp and marked hypertrichosis, which was rapidly increasing, noticed that as her acne and the perceptible greasiness of the skin disappeared the growth of the hair apparently remained at a standstill. All during her treatment she was using some sort of salve, and she concluded that the salves must be especially useful for stopping the growth of hair on her face. The natural conclusion is that improvement in her general condition, resulting in a disappearance of the seborrhea, was the real cause of the arrest of the growth of hair.

There are instances presenting growths of hair in unusual locations more like features, and in which the light colored hair of early childhood becomes darker as the hair of the scalp becomes darker without any toxic influence. I have in mind the case of a young woman from whose face I removed more than three thousand dark hairs, which were arranged almost like a band or bonnet ribbon, extending from the hair line in front of one ear downward over one cheek, under the chin and upward over the other cheek to the hair line in front of the other ear. There was very little perceptible growth elsewhere on the face. She had a very clear, healthy skin, quite free from any perceptible seborrhea, and she was in excellent physical condition. This is an example of an exceptional case, and many exceptions do not make it less probable that a large majority are associated with disturbances of the physiological functions, and in all probability, as stated before, the chief cause is a toxic stimulation of the pilosebaceous system. The elucidation of the particular case rests in the determination of the cause of the seborrhea in the individual.

CONCERNING THE TREATMENT.

There are many devices employed by women to keep hair from showing on the face. Most commonly the hairs are simply pulled out; some women shave; others use pumice stone; and many use the advertised depilatories. Though the X-ray may be safe in some hands I have never made use of this method of removal, and would strongly advise against its general employment, because of its dangerous nature. Sabouraud recommends a thallium acetate preparation as an ointment.[2] It is too early to determine whether it is a success or failure. I have followed only one case in which it was carefully used for over three months. In this case it failed completely.

We have in electrolysis a safe and successful, though slow, method of obtaining the desired result. Of this method I can speak from a number of years of experience and can recommend it. No doubt, as before stated, poor work in electrolysis is to a great extent responsible for the prevalent idea that the method is not successful. Even, however, if the work is well done, there may be a further growth of the fine hairs that remain. By some it is thought that these hairs are stimulated to growth by the electrical current. This is improbable. It is much more probable that the forces that stimulated the hairs to grow in the first place still continue in operation. These forces, whatever they may be, should, wherever possible, be modified or removed.

TECHNIC.

A wall plate or the horizontal arrangement of a plate on a stand is much more reliable than a portable battery. The circuit can be completed by having the patient hold a sponge attached to the positive pole, or by having his hand in a basin of water in which the positive pole is immersed. One to two milliamperes of current is usually

sufficient, and when the needle is properly placed fifteen to twenty seconds is required for the destruction of the papilla. If destruction is complete the hair will often come out when the needle is withdrawn. It should always be possible to extract the hair with the lightest pull.

I prefer selected bulb-end steel needles of the finer quality. Many of the needles are much too stiff, and the ends are too large. In selecting them I always pick the frail, pliable fine pointed ones. By using a frail needle with a bulb end it will be found difficult to insert it unless it enters the mouth of the follicle, which it should do for the most finished technic. There is less pain, less current is required, and there is less destruction of tissue when the needle tip enters the hair follicle, and follows down along the hair shaft. If the needle is in the follicle it is possible to feel when its end reaches the hair papilla, and it can be held there long enough to destroy the papilla and at the same time do very little damage to the tissues. Do not use a holder that covers most of the needle and exposes only enough to reach the bottom of the average hair follicle, as the hair follicles differ in depth in different individuals, and in different parts of the skin of the same individual. It is also necessary to destroy each papilla separately, and to feel just what is being done. This is why the multiple needle plan is fundamentally ineffective and should never be employed.

Many of the more delicate points in technic have to be acquired through practice, and in this work, as in most other work, the personal equation of the operator must enter. I have found it more comfortable for the patient, to have the current turned on gradually after the needle is inserted. Good bright daylight is the best light in which to work. One can remove two to three hairs per minute according to the location and prominence. Several hairs in close proximity should not be removed at one sitting for fear of causing too much tissue disturbance. Visible pitting after electrolysis is unpardonable.

It is well to use absolute alcohol on the skin as suggested by Baum just before working; and as soon as the sitting is over a thorough application of hot boric acid solution will aid greatly in reducing and preventing inflammation.[3] I find it advisable to prescribe a mild salicylic acid or resorcin salve to be used during the course of treatment:

R

Resorcin	2.00
Glycerine	2.00
Cerae albae	1.00
Acidi boracici	1.00
Zinci oxidi	5.00
Adipis benzoatae	33.00

Dissolve resorcin in hot glycerine. Melt together the cerae albae and adipis. Triturate other ingredients well and mix.

Sig. Apply once a day well worked in.

An admonition which should be carefully heeded by every operator is never to err by using the positive pole where steel needles are used, as the deposit of pigment which results will remain permanently unless radically removed by curetting. Though one may feel sure one has the needle holder attached to the negative pole one should never neglect to make certain by immersing the needle and the sponge in water, when bubbles of hydrogen gas that collect on the needle show that it is the negative pole.

Someone sometime will recommend a vaccine for the removal of and prevention of the growth of superfluous hair, and though it may not be wholly without reason, it is more reasonable to believe that, as with acne, the removal of the basic toxemia will do more to render the patient immune than will the vaccine.

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A REASONABLE TREATMENT FOR TYPHOID.

By H. A. COLLINGS, M. D., Winters.

Knowing the efficacy of the culture bacillus bulgaricus in colitis colica and the summer diarrheas of both infants and adults I began using it some time ago in the treatment of typhoid and the results are very encouraging. As Anders says (in his Practice of Medicine, 1911, p. 26): "In the vast majority of cases the bacilli are swallowed. In the stomach they meet with the acid gastric secretions, which often destroy them. The alkaline juices of the small intestine, however, furnish every condition necessary for their further growth and development."

And by thoroughly saturating the patient with the culture bacillus bulgaricus you change the normal alkaline state of the bowel to an acid one and inhibit further growth of the ingested typhoid bacilli (if not killing them), thus reducing the severity of the attack in all its symptoms excepting the persistent headache, and does avoid the (1) initial constipation with following diarrhea, (2) extreme prostration, (3) dangerous tympanites, and (4) delirium.

The usual emaciation does not follow, for it is not necessary, after saturation, to keep them on a liquid diet; a small dose of castor oil promptly relieves any discomfort. In fact, one patient, Case III, actually gained weight.

The usual supporting remedies are required—whisky throughout the attack, but strychnine only at rare intervals.

Following are the cases in which I have so satisfactorily used the culture:

Case 1. R. G., male, age 10. Saw first time October 1, 1913. Had been treated for two weeks by another physician for malaria. No delirium at any time, severe headache, emaciation, some tympanites, enlarged spleen, pea stools. Widal positive by State Hygienic Laboratory. No nurse, no chart kept.

Treatment: 6 cc. culture bacillus each morning; oleum ricini nightly; strychnine sulphate when

needed; saturated solution magnesium sulphate when needed. Saw patient October 1, 2, 3, 4, 6, 7, 9, 12, 15, 19 and 23 when he was discharged. Condition gradually improved from the first. Temperature 104° on October 1, 2, 3, evening, dropping to 99°, and did not rise above that thereafter. No backache or tympanites after complete saturation October 3. Headache throughout.

Case II. N. C., female, age 9. Saw first time April 21, 1914. Had severe headache for several days previous. Under calomel and magnesium sulphate improved so did not see again till April 28 when an intense icterus had developed, with tympanites, enlarged spleen and pea stools, but no delirium. Widal positive by State Hygienic Laboratory.

Treatment: Initial calomel and magnesium sulphate purge; 6 cc. culture bacillus bulgaricus each morning; strychnine sulphate; acidum nitrohydrochloricum dilutum; bismuth subnitrate and oleum ricini when required. No nurse, no chart kept.

Evening temperature April 28 was 104°; April 29, morning temperature 99°, evening 100°; April 30, morning temperature 98°, evening 99°, and on May 1, 2, 3, 5, 8, when discharged.

Headache persisted throughout, but no backache; stools became normal after May 1. Child sat up in bed from April 30 on and played with dolls. Usual soft diet throughout. Emaciation slight.

Case III. Mrs. L. T. A., age 87. Saw first August 14, 1914, at 9 p. m. Had eaten watermelon at noon followed by severe vomiting and purging early in afternoon. Diagnosed as acute ileo colitis with possible typhoid, and agreed upon in consultation with Dr. E. Z. Hennessy of Napa, August 16. Owing to advanced age was doubtful of typhoid until received report of a positive Widal from State Hygienic Laboratory. Daughter was nurse, kept chart.

Treatment: Initial calomel and magnesium sulphate purge; culture bacillus bulgaricus tablets, two tablets every four hours for one week, three times daily thereafter; whisky and strychnine sulphate when necessary; oleum ricini at intervals.

Diarrhea in beginning checked with opium. Pea stools until saturation August 20, after that one or two movements daily semi-solid, later solid. Diet: Beef tea, malted milk, milk toast, coffee, and broth prior to saturation, subsequently chicken, eggs, venison, rice, toast, malted milk and custards. Delirious only August 19 and 20, trying to get out of bed. Headache persistent throughout, no backache, no tympanites.

This old lady was twenty miles away in the mountains and when I could see her but once daily it was a relief to know she was progressing favorably.

The greatest satisfaction secured by this treatment is the almost total absence of the dangerous tympanites. In none of the three cases named did I have even uncomfortable tympanites much less dangerous. This treatment, I believe, is an answer to the plea of Dr. Lewellys F. Barker, in the discussion of his paper on "The Diet in Typhoid Fever" (*Journal American Medical Association*, September 12, 1914, p. 935). "We rarely see marked tympanites with careful feeding; occasionally, however, we do see it. I hope someone will find out how always to prevent tympanites. Only last week a close friend of mine died from typhoid with tympanites and perforation; temperature 106°. If we could have prevented the tympanites in this case he might have lived. . . ."

And by saturating your patient with the bacillus bulgaricus I believe you can avoid this dangerous tympanites, subsequent perforation and death.

Any of the commercial products of the bacillus bulgaricus are acceptable, the liquid culture being the best.

True I have used this in only three cases, but the wide variance in their ages and the very successful outcome of the last, a woman of 87 years, warrants it being reported (I have searched the literature and find none as old as she), and that an opportunity for its use be given in larger fields where I believe it will prove as satisfactory as it has to me.

URETERAL DEFECT REPAIRED WITH LOOP OF INTESTINE—REPORT OF CASE.

By J. HENRY BARBAT, M. D., San Francisco.

Several papers have recently appeared describing new methods of repairing defects of the ureter, all of which appear to have merit, and should enable the operator to remedy these defects with much more certainty than in the past. There are still many surgeons who prefer to do a nephrectomy than to attempt the repair of a resected ureter. The following case is of interest, because it shows that with proper technic, the intestine may be used to bridge any defect of the ureter between the kidney and the bladder.

Mrs. K., age 30 years, had been operated upon early in 1911 for chronic pelvic inflammation. The operation was extremely difficult and the anatomy much distorted, and the surgeon had the misfortune to include the right ureter in one of the ligatures. Thirteen days later an incision near McBurney's point gave exit to a large amount of bloody urine. This continued to discharge urine, and two weeks later an operation was attempted to repair the severed ureter. It was found that about one and one-half inches of the right ureter was necrosed, and the ends could not be brought together; so a ureteral catheter was passed up through the bladder and into the proximal end of the ureter, and the tissues sewed over it to endeavor to restore the continuity of the ureter. This procedure was not successful, and the urine continued to flow through the abdominal wound.

I saw the patient first on May 27, 1911. Her general condition was fair, she presented a central abdominal scar in very good condition, and a small fistulous opening near McBurney's point, leading directly back three inches, from which clear urine flowed. With indigi-carmine, colored urine appeared almost simultaneously from the left ureter and the fistula, showing the competence of the right kidney. The urine was free from bacteria, and the chemical composition identical with that of the left kidney.

The question arose as to whether the kidney should be removed or conserved. In view of its perfect condition I determined to attempt its conservation, and the following operation was done, according to the technic which I described in the Journal of the American Medical Association August 3, 1901. The patient was prepared by giving hexamethylene tetramine, 10 grains three times a day for six days before the operation, and having the bowels thoroughly cleaned out, administering guaiacol carbonate five grains every four hours for two days before the operation. The bladder and fistula were washed out with 10% borolyptol solution, and the bladder left full. Long right rectus incision. The intestines were found matted together by numerous adhesions which were rapidly cut apart with a scalpel, and the raw places sewed over with fine catgut. The ureter was found and traced down to a mass corresponding to the bottom of the fistula. It was

ligated close to the mass and cut; the proximal end was lifted up and clamped. A loop of ileum seven inches long was isolated from the fecal tract, the continuity of which was restored by joining the cut ends with a Murphy button. Great care was exercised to preserve the blood supply of the isolated loop, and avoid tension on its mesentery throughout the operation. The loop was flushed out with a large amount of 1/1000 formalin solution, and the upper end closed by inversion. The lower end was sewed to a slit in the bladder by means of continuous through and through catgut sutures.

With a von Graeffe knife directed downward, a small oblique puncture was then made in the side of the intestinal wall, one inch from the closed end. The end of the ureter was split in half for a distance of one-third of an inch, and by means of two sutures of very fine catgut, the split ends were drawn into the lumen of the intestine and firmly anchored. The muscularis and peritoneum of the intestine were drawn over the ureter at the upper part of its emergence from the intestinal puncture. The abdominal wall closed in tiers.

The patient vomited for four days following the operation, and suffered much pain in the right lower quadrant of the abdomen, without any assignable reason. The bowels were moved on the third day without any difficulty. A small amount of urine continued to flow from the old fistula and on the 14th day a new fistula developed in the median scar which did not close until seven months later. I believe that the new fistula was due to leakage at the uretero-intestinal anastomosis, caused by the violent straining when the patient vomited. The Murphy button was passed on the 15th day. Cystoscopic examination three weeks after the operation showed that the right ureter communicated with the old fistula, and permitted some urine to flow backward. This fistula closed three months after the operation. The patient went home after six weeks with both fistulae discharging very small quantities of urine, which caused her very little inconvenience.

Cystoscopic examination on November 12, 1913, shows urine from left ureter sterile, while the urine from the bladder shows colon bacilli and shreds of mucus. The ureteral catheter can be passed up the right ureter for one and a half inches. The cystoscope can not be passed up into the lumen of the intestine, the opening of which appears as a black hole about one-third of an inch in diameter, with a few shreds of mucus hanging from the edges. The mucus particles waved every minute, as though from a current from above. The bladder was not tender and its walls did not show any signs of inflammatory process. The patient has gained 25 pounds since the operation, and is enjoying the best of health. The quantity of urine secreted has been normal throughout the entire time, and with the exception of the mucus shreds and the colon bacilli, is perfectly normal. I have therefore to conclude that the right kidney is functionating normally and has not yet become infected.

The work which I did on dogs in 1900 convinced me that a loop of intestine could be utilized to bridge a gap between the kidney and bladder in case of necessity. The most unpleasant feature is the almost unavoidable colon infection which takes place. In only one dog did I succeed in avoiding this, by prolonged flushing of the intestinal loop with 1/1000 solution of formalin before suturing it in place. If the gap between the bladder and the proximal end of the ureter is not too great, I would be tempted in future to try the method advocated by Carrel and Beck, and utilized by Jianu in doing esophagoplasty. I do not know how long a strip of bladder can be cut out to make a new ureter and still conserve sufficient blood supply, but the bladder wall is certainly the best tissue which can be used as a conduit for urine.

The effect of urine on the intestinal mucosa is scarcely noticeable, it continues to secrete mucus and is not destroyed by the urine. The end of the ureter will remain patulous if the technic which I described above is carried out; as I have demonstrated on a number of dogs and on eight cases of uretero-cystostomy in the human. There is of course great danger of ascending colon infection attacking the kidney when the intestine is used, but so far my patient seems to have evaded it, and as it is now over three years since the operation, there is good reason to believe that she will continue in good health.

TUBERCULAR PERITONITIS.

By W. O. HENRY, M. D., Los Angeles.

Inflammation of the peritoneum is so common and arises from such a variety of causes, that we are not surprised to find that the tubercle bacillus which is so widely prevalent, very often invades the peritoneal cavity and works injury greater or less to the individual as it irritates and inflames the important membrane. The infection may reach the peritoneum through the blood, by way of absorption from tubercular process in the intestine, mesenteric glands, appendix, or through the genito-urinary tract, and in my experience it is much more frequent in women, and apparently spreads from a primary infection about the tubes. While it may be found in patients suffering from a tubercular process going on elsewhere in the body, as pulmonary, intestinal or mesenteric, still it is more often found as a primary trouble whose origin is in the pelvic region, especially occurring in such cases as are at all amenable to treatment.

Clinically we find two forms of tubercular peritonitis, the ascitic, or moist, and the caseating, or dry, and this latter sometimes through the breaking down of these masses, which are at times very large, and produce a cheesy pus, forming pockets of varying size between agglutinated intestinal loops or the adherent omentum, which is frequently also filled with these caseous masses, which adhere to the bowel or to the abdominal walls and form more or less hard tumor-like growths. In fact so large, irregular and firm do they feel upon external examination that they may be, and often are, mistaken for tumors.

In the early stages small tubercles are found scattered over the peritoneal surface of the bowel, bladder, abdominal wall, and in the female over the uterus and tubes. Later these become more grouped, forming larger nodules, and then into masses of varying size by agglutination and adhesion of diseased structures.

Diagnosis. The symptoms of tubercular peritonitis are often obscure, and the diagnosis difficult, especially in the early stage of this disease. In many cases there is chiefly a gradual failing in health, loss of appetite, loss of weight, weakness, slowly coming on, anemia, constipation, and sometimes frequent urination. There may be attacks of diarrhea alternating with constipation. There is generally slight irregular elevations of temperature and pulse with increased frequency, both of which are more marked in the later stages. There may be a gradual development of ascites, and there is likely to be abdominal pain at intervals, with tenderness upon pressure, and when the nodules are large enough, lumps and irregular masses are found upon manipulation. If there has been a personal or family history of tuberculosis it will aid in the

diagnosis. In some cases, a rectal or vaginal examination will show small nodules or tubercles on the uterus or other structure in the pelvis. There is no leukocytosis and the blood findings are those of anemia. The Von Pirquet, or other tubercular test is positive.

Prognosis. The final outcome of these cases depends upon how early the diagnosis is made, the general condition of the patient aside from the local peritoneal trouble, and finally upon the prompt and efficient use of the well-known means to be used in curing the patient. In other words under fair and reasonable conditions the prognosis may be said to be good in a large proportion of cases.

Treatment. It is a very interesting and noteworthy fact that so great a pathologist and surgeon as the late Prof. Fenger a short time before his death said that tubercular peritonitis is a disease for the internist to treat and does not belong to the surgeon, while only a few months later, after the great surgeon's death, Dr. Frank Billings of Chicago, the noted internist, came out in a public statement and said that tubercular peritonitis was a surgical disease and did not belong to the class of cases to be treated by the medical man or internist. Even now the profession is not wholly agreed upon the treatment in all cases. However, it is recognized by all that a good proportion of cases not amenable to relief or cure by medicine, are curable by operative procedures. If the disease be recognized early, no doubt but open air, rest, good diet, tuberculin, and in some cases change of climate to mountains or sea shore will be curative in many cases which later will not yield to this treatment. As a matter of fact so many cases are not recognized early, that but a small number are really suitable for this treatment alone, but must have surgical means applied which may profitably be followed by the above.

Allow me to cite briefly the following cases which illustrate this disease:

Case 1. Mrs. C., age 35 years. Complained of a loss of appetite, general run-down condition, steadily growing weaker, with slight fever, occasional chills, some abdominal pain. Careful examination revealed a tubercular peritonitis probably starting in the region of the tubes. She was put to bed, given as vigorous internal treatment as possible, and nourishing diet, but steadily grew worse instead of better, when an abdominal section with the removal of the tubes and ovaries was done, after which she steadily improved, and remained quite well. When I heard from her last some ten years later there was no evidence of any return of the trouble.

Case 2. Mrs. C., age 28, mother of three children, had tubercular peritonitis with considerable ascites. Here the same operation was done which resulted in a prompt and apparently permanent cure.

Case 3. Mrs. L., mother of several children, was a comparative invalid for several years. This case occurred in my earlier experience with these troubles. In fact it was in 1895 when I first saw her. I found she had a retroflexed uterus with tubercular involvement of the tubes and ovaries, one side being much more diseased than the other. Here I simply opened the abdomen, removed the tube and ovary most seriously affected, and suspended the uterus. I found the small intestines, the uterine body, the tubes and the ovaries and the abdominal wall widely and extensively covered with the tubercles, but feeling satisfied with the removal of the worst point of infection, and fixing up the uterus, I then closed the abdomen, after which the patient made a very satisfactory recovery and went home in April, 1895. She gained in flesh and weight, but still complained of considerable pain, especially backache. In December she returned for further examination on account of a good deal of pain in her back. And fearing that the work had not been radical enough I again opened the abdomen and did a more radical operation. It was interesting to see how much improvement there had been in the appearance of the peritoneum since the operation in April. The tubercles had almost entirely, though not quite, disappeared and there had been a steady improvement so far as the general appearance was concerned in the peritoneal cavity. I now removed the other tube and ovary, after which she made a steady improvement until she had quite regained her health, and at last accounts, some years after this operation, was still quite well.

Case 4. Mrs. J. had tubercular peritonitis, suffered from nausea, vomiting, chills and fever. Temperature as high as 102°, pulse 140 at times. Here the tubes and ovaries were found to be the chief seat of infection and were removed. Patient made a satisfactory improvement, and temperature came down to normal. She left the hospital apparently well. I have not had the privilege of following this case through and do not know the ultimate outcome.

Case 5. Miss M., age 26 years, had suffered for years from stomach trouble, pain, nausea, vomiting, sometimes vomiting blood, which she and her physicians thought due to ulceration of the stomach. She came to me in 1898 with the report that since May of that year she had been unable to take any solid food, and for ten days or two weeks had lived upon nutrient enemata. Found tubercular peritonitis with retroflexed uterus and tubercular tubes. Removed tubes and ovaries, after which she gradually improved, and went home Dec. 14th in very good condition. In April of the following year she began to have some stomach trouble again, when examination revealed a retroflexed and tender uterus, probably the cause of the vomiting, and which probably prevented entire recovery from the tubercular condition in the pelvic cavity. Therefore May 10, 1899, by clamps and ligature I removed the uterus, after which the patient reacted nicely and went home in very good condition July 10th. From this time on she had no further trouble.

My experience since that time has taught me that the first operation should have been more radical and thus I might have avoided the second operation.

Case 6. Mrs. W., age about 30. Had been married several years, but had never been pregnant, and for several months past had been gradually failing in health. She had some fever, pain, tenderness over the abdomen, and as she became more emaciated and weakened there was a gradual enlargement of the abdomen, evidently due to ascites, until when I saw her she was just able to walk across the room with the assistance of two friends, but so greatly was she distended that she was unable to lie down, and was unable to eat very much of anything, and was therefore in a very critical condition. She had a tubercular peritonitis with ascites. Upon opening the abdomen there must have been three gallons of fluid escaped, and the entire cavity with all the organs were pretty well covered with tubercular masses, and the pelvis was quite filled with these masses, which broke down very easily and could be scooped out with the hand very freely. The tubes and ovaries were removed with all the broken down mass which could be evacuated with them. The abdominal cavity was well dried, and the adhesive points in the pelvis from which the tubercular tumors were removed were wiped out with pure carbolic acid, the wound carefully closed, and the patient put to bed. After a few days she was put upon quinine and guiacol every three hours. She was of course put upon nourishing diet and made a very satisfactory recovery. Six months later she seemed to be entirely well. As well in fact as she had ever been. She so remained for nearly three years. In September,

1906, a little more than three years after the previous operation, she came to me for what appeared to be obstruction of the bowels. She was in good flesh, good color, had no fever, and was in excellent condition until this apparent obstruction came on a few days before. Various means were used to get the bowels moved, but without avail. After repeated consultations, and after every effort proved futile, it was decided to open the abdomen and see just where the trouble was. By this time the woman had grown very weak, and upon opening the abdomen there was no evidence of tubercular deposit anywhere, unless the condition I am about to describe was tubercular in character, but the small nodules and tubercular process that had formerly covered the bowel and peritoneum of the abdominal wall had entirely disappeared. But the mesocolon had enlarged to about the size of one's big finger, and had contracted so much that there was very little mobility for the colon which apparently was the cause of the obstinate constipation. The operation of course did no good in this case, and the woman died within the next two days. This is the most remarkable case that has fallen under my observation.

These are only a few of the many cases I have seen, and all except one have been subjected to operative procedure, and all but one have at least apparently recovered in full from the operation, and from the tubercular condition.

Mauclaire in reviewing his own experience in forty-one cases, comparing them with the record of operative treatment by others, says the evidence shows the great progress realized from surgical measures in tuberculous processes in the digestive tract and peritoneum in the last twenty years, but the responsibility for the success of operative measures rests on the attending physician's diagnosis of the process in time. A writer says some recent statistics report 50% of the patients cured while Kullner's lowest figures show after three years' interval 26% cured of twenty-nine patients with the ascitic form, and 10% with the form without effusion.

Another writer says that "Yeo and other medical observers have reported large series of cases treated by non-surgical measures which also showed a recovery rate of nearly or quite 50%. It is probable, as pointed out by Oschner, that the majority of the cases treated surgically were more advanced, and had resisted treatment by purely hygienic and medical measures, and, therefore, the two classes could not with propriety be compared. The consensus of opinion at present is that all early cases should have the advantage of careful hygienic and medical treatment for a reasonable period. If not improved, they should be treated by laparotomy.

William J. Mayo strongly recommends a search for and removal of the primary focus, which, in a large number of cases, will be found in the fallopian tubes or appendix. A failure to remove this, in his opinion, is responsible for many cases of relapse.

Caird describes four types: 1. Exudative form. 2 Exudative form with adhesions. 3. Dry form. 4. Any form in which the peritoneal cavity is practically obliterated or tubercle has invaded the bowel coat. The operation practiced in all cases was simple laparotomy. An attempt was made to find and remove any prominent forms, and on a few occasions diseased tubes and ovaries were removed. Twenty-eight of the 31 cases recovered from the operation. Of the 18 cases that could be followed, nine died after varying intervals; eight are well, dating from periods of one to nine years after operation.

Without going further into details I may say that whilst I do not pretend to explain the manner in which operation cures these cases, yet I feel justified in recommending it as a rule, especially where treatment upon approved lines does not afford prompt relief. My conclusions then are the following:

First. Tubercular peritonitis is not a very uncommon disease, but occurs most frequently in women, and whilst it may originate from many sources, it seems to be most common in origin about the tubes as the primary seat of infection.

Second. Symptoms are more or less obscure and indefinite, especially in the early stages, and the diagnosis is made oftentimes by exclusion.

Third. There are the two varieties, or the moist and the dry, and heredity may have a predisposing influence in the development of both.

Fourth. The prognosis is fairly good if proper treatment can be given in reasonable time.

Fifth. Treatment may be either medical, hygienic and climatic; or operative, followed by the former.

Sixth. Proper operative treatment should include not only opening the abdominal cavity, but also the removal as far as possible of the original point of infection, as appendix, tubes and ovaries, and thoroughly drying the cavity, and touching up freely with pure carbolic acid all broken down suppurating points, and also removing as much as possible of useless and broken down tissue.

Seventh. Drainage is seldom required, but if there has been much ascites, a large abdominal pad should be applied and a firm bandage should make suitable pressure to prevent the fluid accumulating again, and thus also assist in reabsorption of such fluid as may recur.

COMPOUND FRACTURE OF BOTH FEMURS WITH EXTENSIVE LACERATION OF SOFT PARTS.

By T. W. HUNTINGTON, M. D., San Francisco, and ALVIN POWELL, M. D., Oakland.

This case seems to be worthy of a place in surgical literature, in that it illustrates several important points in the treatment of open fractures, and accentuates, very sharply, at least two or three serious hazards attending such injuries.

Patient: F. K., age, 25 years. Carpenter in the employ of the Western Pacific Railway. Family history, previous history, and habits, unimportant.

On September 12, 1913, at 5:30 p. m., patient was thrown through the open door of a bunk-car, while the train was moving at the rate of fifteen miles per hour. The brakes were suddenly set and the car, in which he was riding, collided with the car preceding it.

There is no evidence that the car wheels passed over either thigh. It seems probable that his injuries were caused by direct violence. He sustained compound fractures of both femurs; the right being extensively comminuted.

There was free hemorrhage from both limbs. He was taken, at once, to the Portola Hospital, a distance of twenty-five miles, where Dr. Bennett packed the wounds and placed him in bed. The same evening, he was taken to the Merritt Hospital in Oakland, having been encased in a double plaster of Paris spica. He arrived at the Merritt Hospital at 8:00 a. m., September 13, 1913, in the service of Dr. Alvin Powell, local surgeon.

He was suffering greatly from shock and loss of blood. The wounds were irrigated and cleansed externally, and the patient allowed to rest from the 13th to the 15th of September, during which time, he rallied somewhat from shock and his condition seemed more hopeful.

I saw the patient in consultation with Dr. Powell on the morning of September 15th and examined him carefully under an anesthetic. The original cast was removed and the wounds irrigated. On inspection, it was found that the skin wounds were on the anterior interior surface of the thighs.

The wounds gaped and soft tissues protruded. The muscles of both thighs were extensively lacerated and divided. This was specially true of the anterior muscles of the thigh where they were literally torn across. The entire musculature of both thighs was in a most deplorable condition.

Both femoral arteries seemed to be intact and at this time there was no active hemorrhage. The immediate need in the case was for dependent drainage. Accordingly, free counter-incisions were made to insure adequate escape for fluids. Open cavities were thoroughly cleansed and packed with camphor-phenol gauze. It was found that the right femur had been comminuted, very extensively; the left broken across and maintained the ordinary position of femoral fragments with the fracture line near the middle.

It seemed that the left limb was in far better condition than the right. The patient was, then, placed in bed and dressed with voluminous gauze and cotton pads. Traction apparatus was applied to both lower limbs and eight or ten pounds weight attached.

On September 18th, patient complained of severe pain in the left limb, demanding anodynes. Temperature, 101°. On the 19th of September, there being manifest evidence of tension along the inner side of the left thigh, Dr. Powell freely opened the upper and interior femoral area, again establishing free drainage and a considerable amount of blood clot and tissue detritus was removed and the wound again packed.

During the following two days, the patient's condition was unsatisfactory. Hemoglobin remained at about 50. Red blood count, 2,800,000. A loud systolic murmur was heard at the apex and an ice bag applied over the heart. Laboratory reports showed a pure culture of colon bacillus.

On the 22nd of September, the wounds were, again, irrigated and a boric acid pack applied. On September 23rd, patient had a fair day and night, though he was slightly irrational. The wounds were looking well and the discharge was much less. Infection seemed to be of a mild type.

On September 24th, the heart sounds were fairly normal. Had a fair night and the outlook was altogether favorable. Continued in favorable condition during September 25th. On September 26th, had a slight hemorrhage from the left thigh, but lost very little blood. On the 27th of September, condition was still more favorable. On the afternoon of the 28th, had a severe hemorrhage from the inner side of the left thigh. An Esmarch was applied immediately, and within the next one-half hour, Dr. Powell ligated the left femoral artery. At this time, he was nearly exsanguinated.

In spite of the free use of normal saline, he died seven hours after the operation. Post-mortem examination revealed the fact that the left femoral artery was eroded and split for one and one-quarter inches in the lower part of the wound.

Résumé: A young, robust man. Open fractures of both femora. Extensive comminution of one. Ghastly injuries of soft parts of both thighs. Division and disintegration of musculature. Free initial hemorrhage. Primary infection. Removal of patient from place of accident to an emergency hospital, twenty-five miles distant. Second removal, two hundred miles, to another hospital. Administration of ether on three different occasions.

Patient survived for fifteen days, at which time, the wounds were granulating, infection was well under control, and there was a good prospect for recovery. At this point, there was a sudden fatality from hemorrhage from the femoral artery.

The points to which attention is especially directed are, as follows:

(a) In the presence of very grave injuries involving multiple fractures, with separation and attrition of soft parts plus initial infection, there is reasonable hope under ordinary circumstances of ultimate recovery.

(b) That the control of infection demands ample provision for drainage through liberal counter incisions, application of antiseptic solutions and packing of cavities with camphor-phenol gauze.

(c) That such fractures should be dressed loosely. Tension through tight bandages and splints, such as plaster of paris, should be avoided. Gentle traction will provide, temporarily, for adequate adjustment of bony fragments.

(d) Secondary hemorrhage should be anticipated and at the first warning, a tourniquette should be adjusted so as to be applied instantly, if required.

Finally, when possible, full provision for transfusion should be made. Appliances should be at hand and this measure undertaken as soon as the bleeding vessel is ligated.

Had we succeeded in avoiding the final disaster in this case, it seems probable that a satisfactory result would have been attained in the left and, possibly, in the right leg.

THE ADVENT OF CHINESE DOCTORS INTO CALIFORNIA.

By J. F. GIBBON, M. D., San Francisco.

Some forty years ago two white men wanting to make money conceived the idea of employing a shrewd Chinaman (he subsequently proved shrewd all right!) to play doctor at a salary of $100 per month. The Chinaman's name was Li Po Tai.

A store was rented on the corner of Washington street and Washington alley, opposite Brenham place, opposite the northeast corner of the Plaza. The store was decorated with Chinese flags and mysterious hieroglyphics, etc. In the rear part of the store was a Chinaman cooking the herb tea. In the front part of the store was a large square table, on it was a fancy cushion and beside it sat the great Chinese Doctor Li Po Tai from China, who cures all diseases with herb tea only, consultation free, ready for business, his white employers working the town on the outside telling of the wonderful cures the great Chinese Dr. Li Po Tai was effecting with herb tea, "consultation free."

When the sick man or woman called for free consultation, Dr. Li Po Tai would put on a large pair of spectacles, look wise, tell the patient to place the back of the hand on the cushion, feel the pulse or pretend to look at the tongue, study the case and say liver and kidney disease, or no blood in the heart, and would cure with herb tea for $10 a week, to be paid in advance, which was always the case.

The patient must come to the office to drink the tea. The trick was to have all come to the office so all could see the immense practice the doctor had. The scheme worked all right and money came in fast and the practice of the great Chinese doctor increased rapidly for many months.

Li Po Tai found out he was making a great deal of money for his white employers so he discharged himself from them and continued in practice for his own benefit and got wealthy at it.

He put his patients on a diet, cutting out all things causing the trouble, giving nature a chance to right itself and effecting the cure, and the great Dr. Li Po Tai got the credit of it. Li Po Tai made money rapidly and invested some of it in Chinatown property. He bought a piece of property on the corner of Clay street and Brenham place, where he resided.

He knew absolutely nothing of anatomy or the circulation of the blood. Not necessary for the great Chinese doctor to know anything about it.

I had a complete articulated skeleton hanging in my office. A Chinaman cleaning in the office and seeing it asked me if he could bring his friend in to look at it. I said bring him in. He brought him and he looked it all over and pointed to the ribs and said, "Too many bones." I asked him "How many?" He said, "Twelve instead of twenty-four in all." I learned from the Chinaman that his friend was the great Dr. Li Po Tai.

Later on his residence took fire and he came very near being burned to death. He called in the late Doctor James Murphy, who succeeded in saving his life. Some time after I was riding in a Kearny-street car. I noticed sitting in the corner of it a repulsive looking Chinaman, his face covered with deep scars. A man told me he was Dr. Li Po Tai, who came near being burned to death.

Years after he sickened and died. His funeral was the largest that ever took place in San Francisco, over 300 carriages, two hearses, four horses, each covered with white flynets, two white bands of music, 40 pieces each, together with several Chinese bands. The funeral services were held in the Plaza, taking up nearly all of it. The funeral started, taking in all of the streets of Chinatown and out Bush street to Laurel Hill Cemetery, where the remains were deposited in the vault for shipment to China.

Other shrewd Chinamen, learning of Li Po Tai's success, tried their hand at the game, and it worked so well that Chinese doctors sprang up all over the coast and into the adjoining states and territories and continued ever since.

On one occasion two men called at my office to consult me. One asked me to examine him. I did so and gave him my opinion of his case and told him what I could do for him. He said his friend in the adjoining room had liver disease. I said, "Send him in for examination." I examined him carefully and told him there was nothing the matter with him and he needed no medicine. Both left and said they would call again. Next day the first man called and said he would undergo my treatment, and did so. In a few weeks of treatment he got well. He told me that he had been under Dr. Li Po Tai's treatment for twenty weeks at $10 per week and paid him $200. Hearing that Li Po Tai was a fraud, he took his well friend to Li Po Tai for free consultation and the Doctor told him that he had liver and kidney disease and would cure him with herb tea for $10 a week. That let the twenty weeks' man out with $200 worth of experience.

When a Chinese gets sick he goes to the Chinese drug store and calls for the remedy by lottery. The lottery box is handed to him. He puts his hand into it and draws the name of the remedy, hands it to the druggist, gets it and takes it to cure him. Now for the remedies. Dried powdered snakes and lizards, wasps' nests, scraping of deer's horns, herb teas, hundreds of years old, pills the size of marbles with hieroglyphics on them.

The Chinese highbinder, before the commencement of a Tong war, eats wildcat meat to make him "fight brave." When the wildcats get scarce, they pay as high as fifty dollars for one. In the past, when a sick Chinese got incurable, his countrymen put him in a subcellar with a bowl of water and some rice, to live as long as he could on it, which was not very long.

Fancy white sick men and women going to a Chinese sanitarium to drink herb tea with a pinch of powdered dried snake or lizard thrown into it!

The Chinese sanitariums and free consultation doctors are run by white men as in the days of Li Po Tai, that is, the few of them that are left.

A CASE OF ACUTE PANCREATITIS WITH AN ACCOMPANYING PSEUDO-CYST.*

By H. A. L. RYFKOGEL, M. D., F. A. C. S., and G. H. TAUBLES, M. D., San Francisco.

The following case history is presented on account of its several interesting features.

The patient, a woman of 44 years, weighing about 200 pounds, was admitted to my service in the City and County Hospital on January 22, 1914, in a condition of stupor, from which, however, she could be easily aroused. She was then able to answer simple questions as to her condition but several days elapsed before it was possible to get a clear account of her previous history.

When first seen she was evidently suffering from severe abdominal pain; her muscles were so rigid and her tenderness was so great that it was not possible to palpate the abdominal contents; her pulse was weak and ran 132 per minute; she had a temperature of 103.5° F.; her leukocytes numbered 24,000 per c. mm. and urine removed per catheter showed a trace of albumen but no other easily demonstrable change.

On account of the absence of history and localizing symptoms and poor condition of the patient operative treatment was postponed and she was stimulated and given large quantities of water. Her condition rapidly improved and although her leukocyte count remained about the same, her temperature fell to 100° F.

Her tenderness and rigidity gradually became localized to the left hypochondriac region and by the fourth day a mass about the size of a child's head could be palpated in this area. Pressure after the method of Murphy showed another but somewhat less tender area in the region of the gall-bladder.

Examination of the heart and lungs showed no special lesion, there was no adenopathy and no light was thrown on the symptoms by laboratory examinations of the feces and gastric contents.

She was now able to give her previous history, which ran as follows:

Born in Kentucky of a healthy father and a tuberculous mother, she had all the usual diseases

* Read before the San Francisco County Medical Society, May 19, 1913.

that afflict neglected children and in her early adult life suffered from acute multiple arthritis—rheumatic fever as she called it—malaria, yellow fever and dysentery, but through some unexplained good fortune never had typhoid fever. At twenty-five she had a Cesarian section and, since the wound suppurated, she remained in the hospital almost two years. During the next twelve years she remained in good health.

At the age of forty-two she began to suffer from pain in the upper abdomen and distressing accumulations of gas in the stomach. The pains usually came on suddenly and most frequently at night but bore no relation whatever to the time of eating nor to the character or quantity of the food. During this period the patient had several chills which were followed by fever. At one time, several months ago, she had an attack in which the pain was excruciating and prolonged and accompanied by collapse and later fever. Finally, six days before admission, and just after an attack of colic and mild jaundice, she had an attack of pain so severe that she became unconscious. When consciousness was regained she was in a cold and clammy sweat and had to take to her bed. The pain was throughout the abdomen and remained so until her admission. Two days before she came to the hospital she had a severe chill followed by a heavy sweat. During this time her physician had been unable to produce catharsis and finally, as her symptoms continued, sent her to the hospital with the diagnosis of appendicitis and bowel obstruction. In the hospital the colon was readily emptied by repeated enemas.

The study of the foregoing history and symptoms readily led to a diagnosis of cholelithiasis with adhesions binding the gall bladder to the pylorus. It was also considered probable that at the time of pain and collapse, months before, she suffered from a perforation of the gall bladder and a resulting localized peritonitis.

The present attack was thought to be possibly due to an acute pancreatitis but the differentiation from a possible infected pancreatic cyst could not be made. The history seemed to clearly rule out any possibility of that type of perforating gastric ulcer which is accompanied by a tumor mass composed of inflammatory tissue.

Six days after the patient came under my care her condition was sufficiently favorable to warrant an operation which was thereupon performed with the following findings:

On opening the abdomen, numerous recent adhesions between the parietal peritoneum and the stomach, omentum and colon had to be separated and while this was being done there was a sudden gush of clear serous fluid, perhaps five hundred cubic centimeters in amount, from a pocket about three inches to the left of the middle line. The tumor at once disappeared and examination of the walls of the cavity showed them to be lined by the peritoneal coatings of the stomach and gastro-colic and greater omenta. No change was noticeable in the peritoneal lining other than numerous areas of fatty necrosis. The tail of the pancreas, as felt through the overlying structures, was enlarged to two or three times its normal diameter and formed a mass about six by ten centimeters in size. The head was only slightly enlarged. The cavity of the lesser omentum seemed to be obliterated at this point. The fat of the abdominal wall and that of the omenta showed numerous areas of fat necrosis varying in diameter from a couple of millimeters to a centimeter, and more numerous in the neighborhood of the pseudo-cyst than elsewhere. The pancreas was not incised nor directly exposed and therefore we do not know whether or not there was any hemorrhage into its substance.

The gall-bladder was next exposed and found embedded in a dense mass of adhesions which fixed it to the pylorus and to the right border of the greater omentum. No evidence of recent inflammation was found but, at the point of densest adhesion of the omentum, there was opened a small cavity about the size of a pigeon's egg containing a dark greenish substance—evidently inspissated bile. No present communication with the gall-bladder could be demonstrated although the dense scar of the old perforation could be plainly seen. The gall-bladder wall was but slightly thickened and contained clear bile and eight stones of varying sizes. No stones were found in the common duct and the foramen of Winslow was patent. The gall bladder was drained in the usual manner and a cigarette drain was led to the bottom of the pseudo-cyst.

The patient made a relatively uneventful recovery and at the end of a month left the hospital free of the gastric and other symptoms of which she had been complaining during the past two years.

Having just given the clinical history of this interesting patient may I be permitted to reconstruct the pathologic history, if such is may be called.

Two years or more ago she developed cholecystitis and as a result concretions developed in the gall-bladder. She had recurrent attacks of this affection and a consequent localized peritonitis soon caused adhesions to the surrounding structures and as the pylorus was also involved and fixed the characteristic inability of the stomach to empty itself of swallowed air became apparent and with the reflex hypochlorhydria seen in gallstone disease accounted for the patient's dyspeptic symptoms. During the course of the disease, possibly as a result of pressure from a stone, there developed an ulcer which perforated and caused the transient but very severe symptoms of some months ago.

Just before the illness, for which she came to us, a stone became impacted in the common duct long enough to produce pain and slight jaundice. The subsequent progress of the calculus is of course not so clear, but the widespread progress of the fat necrosis as compared with the relatively slight acute pancreatitis suggests that at first it blocked the duct of Wirsung as well as the choledochus in such a fashion as not to permit the flow of bile into the former and to cause a damming back of pancreatic secretion and its diffusion through the lymphatics into the surrounding tissue, thus producing, as Opie has shown by his experiments on cats, necrosis of the fat cells.

The calculus now passed on and was for a very short period blocked in the ampulla of Vater, the pancreatic duct was no longer direct-occluded and bile not being able to flow into the duodenum was forced into the pancreatic duct and directly or indirectly produced an acute pancreatitis. Of course it is quite possible that the first point of lodgment of the stone may have been in the ampulla and the fat necrosis may have been produced by the pancreatitis alone, but I feel sure that it was too extensive to be thus accounted for.

A mild peritonitis evidently occurred at the same time as the pancreatitis and was probably secondary thereto. It produced extensive adhesions that partially obliterated the lesser peritoneal sac and caused a pocketing of serous fluid in front of the gastro-colic omentum. These mild inflammations of the peritoneum are occasionally seen in acute pancreatitis, even when not of the hemor-

rhagic type, but the encysted accumulations of fluid have usually occurred in the lesser peritoneal cavity as a result of the blocking of the foramen of Winslow and have here been termed pseudo-pancreatic cysts though they are in no sense true cysts but rather accumulations of fluid in a pre-existing cavity.

In our case there was, of course, no cyst at all but instead only a collection of fluid walled off by adhesions, but since it clinically suggested a cyst and occurred in a region where and in a disease in which cysts are frequently seen, we have taken the liberty of terming it a pseudo-cyst.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of December, 1914, the following meetings were held in the Library of the Society:

SECTION ON MEDICINE, TUESDAY, DECEMBER 1ST.

1. The Occurrence of Heart Block in Acute Diseases. H. W. Allen.

2. Two Cases of Heart Block. J. B. Frankenheimer. Discussed by W. Ophüls and R. Brooke.

3. The Etiology of Aortic Insufficiency. E. C. Dickson. Discussed by H. P. Hill, W. Ophüls, R. L. Wilbur, L. Schmitt, W. F. Cheney, J. Rosenstirn, G. W. Hartman and H. R. Oliver

ANNUAL MEETING, TUESDAY, DECEMBER 8TH.

Tuberculosis Osteomyelitis of the Upper End of the Femur. T. W. Huntington. Discussed by J. T. Watkins, H. M. Sherman, L. Ely, C. C. Crane, C. F. Welty, C. G. Kenyon, C. J. McChesney, W. I. Baldwin and G. H. Taubles.

The Presidential Address and reports of officers follow:

PRESIDENT'S ADDRESS.

By ARTHUR A. O'NEILL, M. D.

The speaker believes it to be the duty of the retiring President to give the society over which he has had the honor of presiding the result of his observations of the organization and its practical working, what it has, and what it may, accomplish. The society is to be congratulated upon the fact, in spite of the adverse financial conditions which prevailed during the year that has just closed, it has enjoyed a normal increase in membership and no diminution of its revenues.

At the outset the criticism I have to offer is that we are top heavy, we have too many directors. Think of a directorate of twenty-one members for a body of less than six hundred. A moment's thought will show that we have more directors in this association than there are supervisors to run the municipality of San Francisco. The absurdity of this feature of our body is so striking that I deem further comment unnecessary. But to emphasize this criticism I have but to add that six constitutes a quorum and that on more occasions than one it has been necessary to await the arrival of a belated director in order to transact the buisness of the meeting.

To rectify this anomalous state of affairs I would strongly urge that the society be controlled by a board of governors, to consist of five members, who are to hold office for five years, one to be elected each year. On organization the length of each term to be determined by drawing lots. It should be stipulated that no governor be eligible for the presidency, and that all questions involving the policy of the society should be submitted to the body at large for final action.

By having a governing board of this character we could abolish most of our standing committees such as those on admissions, finance, medical ethics, etc. This measure is in keeping with all up to date organizations and is practically the commission form of government. As an example of obtaining action under the present ponderous system I would cite to you that it has taken quite a year's time to have installed the much-needed improvements in the lighting and ventilating systems in these rooms.

Since my election my dominant idea has been to enlarge the scope of the society's activities so that it might become more of a power in the community, and I have assumed that the society has a threefold function,

1. To the individual member.
2. To the profession at large.
3. To the general public.

A review of the year's work shows that there has been a marked improvement over the past under these headings.

A recent writer has stated that "medical men acquire knowledge in three ways, from examination of patients; from their reading; from association with other physicians." It was the idea of the speaker when he advocated the division of the society into sections that the president should preside at all section meetings and in that way outline a definite policy, that sectional work be correlated, and that a subject in medicine could be considered from every standpoint. It is to be hoped that some such plan will be carried out. The presentation of a large number of admirably worked up cases shows that the demonstration of patients is becoming more popular with the members, and with proper encouragement will be a great aid from an educational standpoint.

The section meetings tend to the bringing of the men into closer contact, to brush off the feeling of aloofness, to encourage discussion, and the little social gatherings after the sessions enable all to become better acquainted. That the society is not derelict in furnishing reading matter in the shape of current medical literature is shown by the many additions to the library during the past year. The library under its present very able management has proved of such benefit to the profession that it should be granted the most liberal support.

It would be well to consider if it were not possible to have a general meeting once a quarter to which the public could be invited and subjects pertaining to public health discussed. The education of the public in matters medical is to my mind a duty of the society and the co-operation of the allied professions, such as sanitary engineers, actuaries, architects, should be sought.

Under the second caption it is a paramount duty of the society to support the State Board of Medical Examiners, to aid them in every way possible. Every two years rumors are rife that laws pertaining to medical practice will be repealed and the state thrown wide open to all classes of practitioners good, bad, and indifferent. To endeavor to legislate against people who have been educated at inferior colleges is to my mind like cutting down a tree by lopping off its branches instead of destroying it at the root. An earnest endeavor should be made to effect a repeal of the law which, at present, permits of five men with the sum of fifty dollars to incorporate a medical college. The enactment of a law that would compel all applicants for charters for medical schools to submit the application to the Regents of the State University for their approval, before articles of incorporation are issued would, in a very effective manner, prevent the establishment of illy equipped schools.

I wish in a very special manner to commend the excellent work of the Committee on Public Health. Under their very energetic chairman they have accomplished much good. Conferences between them and the health authorities were frequent and of mutual benefit to the society and public. I would suggest that they devote their energies to the establishment of a municipal laboratory for the manufacture of diphtheria antitoxin. This substance, of such potent value as a prophylactic as well as a therapeutic agent, should be provided free of cost to all patients and their contacts. In addition to the humanitarian principle involved it would soon prove its worth from an economic standpoint. I would like to see this society take the initiative in this work. No one will gainsay the enormous advantages to medical science of thorough study of pathological changes produced by disease. But how often are our efforts defeated by hospital authorities who take refuge behind the present law which forbids the use of a body for "dissection." "In Bellevue not long ago less than 50% of the cases that went to autopsy were diagnosed correctly, and presumably these cases had all the advantages of the complete facilities of a great hospital for diagnosis." This observation would no doubt apply with equal force to any hospital in our fair city. The law should be so amended that a medical attendant could be empowered to perform a necropsy on the body of any person dying in a public institution.

An investigation by the Philadelphia County Medical Society of the 16 largest hospitals in that city revealed the fact that 31% of the hospitals visited showed that the records were kept in such a way that they were absolutely useless for scientific purposes. I feel sure that if this society were to investigate the hospitals of San Francisco on the matter of clinical records the same deplorable condition would obtain. There is no reason in the world why an endeavor should not be made by this body to bring about a uniform system of records so that they could be accessible to any number of the profession engaged in research work. This society could be of inestimable aid to those in charge of public hospitals if it would aid them in obtaining apparatus necessary for the scientific investigation of the phenomena of disease.

The conjoint meeting of the Bar Association with the society, their hearty co-operation with us in the endeavor to improve the status of the medical expert witness, resulted in much good as it served to bring about a better understanding between the two professions and may serve through suitable legislation to bring about a much-needed reform and thus remove from us the stigma of the biased medical witness.

Let us then leave the beaten tracks, be not content with academic discussion of purely medical subjects, but broaden our horizon and be what my hope has been that the society should be—a power for good in the community.

REPORT OF THE SECRETARY-TREASURER.

Mr. President and Members:

As Secretary, I beg leave to submit the following report for 1914, that is, from December 8th, 1913, to December 7th, 1914.

The total number of members for whom we have paid assessments to the State Society is 597, as compared with 589 of last year.

It may be of interest as a matter of record to note the following:

In 1907	the	membership	was	498
1908	"	"	"	482
1909	"	"	"	482
1910	"	"	"	476
1911	"	"	"	548
1912	"	"	"	556
1913	"	"	"	589
1914	"	"	"	597

It will be seen that our membership is very slowly increasing, in spite of our being obliged to continually weed out members who do not pay their dues.

In Los Angeles, however, there is a constant campaign for new members, this being carried on by the individual members of the Society, with a success that should put you all to shame. I would again urge renewed efforts along these lines.

NON-PAYMENT OF DUES.

Under date of April 15th, 1914, seven men were dropped from membership, and their assessments were not paid to the State Society. We paid assessments to the State Society at the beginning of the year for nineteen men, in the belief that they would pay us as in the past—slowly but surely—but who have not as yet done so. They are herewith declared dropped from the membership roll, only to be reinstated upon payment of $1.00 in addition to the amount already due. To two other members who are delinquent, the Board of Directors on March 3d granted extension of time.

SCIENTIFIC MEETINGS.

I would again like to call attention to the fact that but few men comply with the rule of posting

their papers in the Society 10 days preceding the meeting at which they are to be read. As we stated last year, even those who prefer to talk without notes would greatly oblige their confrères, and encourage intelligent discussion, if they would give a syllabus of their remarks (not to exceed 10 lines) which would be published in the program. In those cases where papers were posted, the speakers were rewarded by unusually excellent discussions and commented upon them to me. In no cases were papers criticized or authors attacked in the manner apparently feared by some who hesitated to post their papers because of that possibility. We repeat: we would be only too glad to publish in the program a syllabus in every instance.

In accordance with the wishes of the Finance Committee and the Secretary, and as approved by the Board of Directors, a certified public accountant has gone over the accounts of the Society, and a report for the first six months of 1914 has been filed by the accountant. The books have not as yet been examined for the last six months. In the report of the accountant, it will be seen that all the accounts for the first six months have been proven correct. In the above mentioned report, attention is called to the length of time which elapsed before the semi-annual bond interest was deposited in the bank, namely, some three months. This is an occurrence which can hardly be avoided, owing to the fact that the bonds are in the safe deposit and that it is necessary for the President and Secretary to go there together. Not only this, but presidents are elected every year and the retiring as well as the new president must go with the Secretary on the first occasion that coupons are to be clipped. In the second instance, i. e., for the semi-annual interest, only two men are to be gotten together. In view of this fact, it would be a distinct improvement if the President were relieved of this arduous duty, it being the only one in which money is involved in which he is at all concerned during his term of office. We further believe it would be far better if the Secretary too were relieved of this task and his responsibility be assumed by the Executive Secretary, who, after all, holds office permanently, is under bonds (the amount of which could be very well raised to cover any likelihood of loss), the Society, of course, paying the premiums on the bonds as heretofore. With the Executive Secretary, either the Chairman of the Finance Committee or his certified accountant could carry out these duties.

The detailed financial statement follows:

STATEMENT UP TO DECEMBER 8th, 1914.

Bal. on hand Dec. 10, 1913		$ 675.51
Receipts:		
Dues	7961.35	
Repaym't of loan State Soc	1015.00	
Interest on bonds—		
5 Pac. Tel. & Tel		
5 Spring Valley Water..	450.00	
Rent of Library, Milk Com., phones, repayment on binding ,etc..	66.25	
		$10,168.11
Disbursements:		
Library:		
Binding	$ 437.30	
Subscriptions and supplies	789.65	
One-half State Journal rent in lieu exchanges	180.00	
Rent	1200.00	
Salaries	1300.00	
Printing and stationery	654.90	
Telephone	103.80	
Kohler & Chase (rental of hall three times)	45.00	
Towel service	18.00	
Water and sanitary cups	34.75	
Rental of chairs	8.00	
Moving picture expense	32.50	
Medical Soc. Calif. (Assess. on 597 members)	3582.00	
Dues to Chamber of Com..	60.00	
Physicians' Relief Fund	322.00	
Typewriter for Library	85.05	
Committee on Necrology	10.00	
Auditor for accounts—Jan. to July, 1914	25.00	
Sundries	68.86	
Christmas present Butler Bldg. employees (1913)	10.00	
Secretary's salary (1913)	200.00	
		$ 9,166.81
Balance Dec. 8, 1914		$ 1,001.30

The following amount (approximate), bills for which are not yet received, will have to be paid by December 31st:

Foreign Journals (1914)	$ 600.00	
December printing (ballots, return envelopes and programs) about	45.00	
Telephone	10.00	
Water and towel service	3.00	
Xmas present, Butler Bldg. employees	10.00	
		$ 668.00
Approximate surplus		$ 333.30

In other words, if we were to go out of business on December 1st, 1914, after paying all our bills we would have a balance of $333.30.

Following the Secretary's suggestion, the Board of Directors at its meeting on February 3d, authorized the appointing of the Executive and Assistant Executive Secretary to do the work of the office and library. Mrs. Sargent was thereupon appointed by the Secretary to the office of Executive Secretary, with power to appoint her Assistant. Their services, greatly increased during the year by virtue of the Secretary depending more and more upon them, have been not only absolutely satisfactory, but are worthy of special praise, espe-

cially because of the great interest displayed by them in the conduct of their office.

A number of matters called to the attention of the Secretary have been taken up by him independently at various times. One of interest to many members was in regard to the traffic ordinance controlling the parking of automobiles in Union Square. The mayor as well as the members of the traffic squad were interviewed by the Secretary, and a ruling obtained permitting physicians to place their cars around certain parts of Union Square, most of the vehicles for rent being closely herded on Geary street. Quite recently, and unknown to any members of the Society, a new ordinance was passed, permitting the standing of public vehicles at the north side of Geary between Stockton and Powell and on the west side of Stockton between Geary and Post. It states that "No public vehicles shall be allowed to stand in these places unless the owner has first obtained a permit from the Chief of Police; such permits shall be limited to 35 at one time." This new ruling is working hardship to a number of physicians with offices on Union Square, and the matter is again to be taken up with the Board of Supervisors.

Respectfully submitted,
RENÉ BINE, Secretary.

REPORT OF THE LIBRARIAN.

To the President and Members of the San Francisco County Medical Society.

Gentlemen:

The progress of the Library in the past year has been satisfactory. We have been especially gratified to note the number of members who have given books to our files and hope that it may increase. Our limited income is expended wholly in keeping up our journals so that we are unable to acquire single books and monographs, except as they are given us by members or come in exchange for reviews from the STATE JOURNAL.

The services of the Assistant Librarian are being called on for bibliographical work with increasing frequency. We would urge members to be as accurate and explicit as possible when they send in references for verification or lists of subjects on which they wish to get literature. A whole afternoon is often spent in a futile search for a wrong reference.

We have pursued the policy of keeping our files and shelves open to everybody. This makes it much easier for a man who does not know exactly where to lay his hand on a subject to look over the general literature. It has the great disadvantage that it is impossible to control loss. We would urge members not to abstract books and journals from the Library without entering them at the Library desk. Our losses have been considerable and it has cost us much time, trouble and money to replace volumes lost from sets.

We have improved the Library by the addition of a new stack, and by an efficient system of lighting, a suggestion for which we have to thank our President, Dr. O'Neill.

During the past year we have purchased:

For the completion of files	33 vols.	
Received—		
From the California State Journal of medicine	115 vols.	
By gift	59 vols.	
Library Exchange	2 vols.	
Bound	414 vols.	
Total	623 vols.	

We are receiving regularly 202 journals, and have added 11 new ones to our list.

Our actual disbursements have been:

For binding	$437.30	
Domestic subscriptions and incidentals	125.33	
	$562.63	$ 562.63

In addition to this, we have paid for purchases made last year but paid for this year:

Foreign journals (1913)	$518.87	
New Stack	70.50	
Century Dictionary	76.95	
	$664.32	$ 664.32
Total		$1226.95

In the Library drawer, collected from fines, telephones, etc., there are $22.45.

Respectfully submitted,
LEO ELOESSER, Librarian.

REPORT OF THE COMMITTEE ON NECROLOGY.

It having been the will of Almighty God to take from us one of our esteemed and younger members, Dr. G. Burton Turner, we submit the following:

Dr. Turner was born in Micanopy, Florida, November 6th, 1886. His early education was in the grammar and high schools of Indianapolis, Indiana. He took his collegiate course at the Northwestern University, Chicago, Ill., where he received the gold key during his junior year. Upon his graduation he was appointed to serve on the staff of Saint Luke's Hospital, Chicago, for two years.

When he left Saint Luke's Hospital it was to accept a position as Assistant Surgeon on the Surgical Staff of the Northwestern Pacific R. R. Company, which position he held with credit until his death, September 19th, 1914.

Dr. Turner leaves a father and a sister, and was a nephew of Dr. Gustav J. Bergener of this city.

Dr. Turner was a member of the following societies and fraternities: County and State Medical Societies and American Medical Association, Pacific Coast Association of R. R. Surgeons, Medical Fraternity Phi Rho Sigma, Literary Fraternity Phi Delta Theta, and honorary member of Alpha Omega Alpha.

Dr. Turner was known to us only to be loved and respected. His future was exceedingly bright, having achieved in the short time while in his

chosen profession, a position to be envied by many. A. MILES TAYLOR.

COMBINED MEETING OF TKE SECTIONS ON SURGERY AND UROLOGY, TUESDAY, DECEMBER 15th.

1. Resection of the Acromioclavicular Joint; Demonstration of Patient. Sol Hyman.

2. Demonstration: Removal of a Papilloma of the Bladder with Operating Cystoscope. Henry Meyer.

3. Demonstration of Case. M. P. Carpenter, 32 yrs. of age. Admitted to County Hospital December 15th with an enormous carcinoma of the cheek, neck and jaws. Twelve yrs. ago he had received X-ray treatments for a period of five weeks, for what were probably tuberculous glands of the neck. He does not remember the exact number of exposures given. Microscopic section shows squamous cell carcinoma.

4. Pitfalls in the Diagnosis of Surgical Renal Lesions, with demonstration of specimens and plates. M. Krotoszyner. Discussed by W. P. Willard and J. Rosenstirn.

SECTION ON EYE, EAR, NOSE AND THROAT, TUESDAY, DECEMBER 22d.

1. Demonstration of Cases:
   - A. Barany Conservative Radical Operation. Henry Horn.
   - B. Case of Ludwig's Angina. M. W. Fredrick.
   - C. Two Cases of Cataract—Smith Operation. A. S. Green.
   - D. Optic Atrophy (one sided) in girl of 15; etiology not known.
     Congenital Staphyloma of Both Optic Nerves. Hans Barkan.

   Discussed by E. D. Shorthidge and O. Tobriner.

2. The Smith-Indian Cataract Operation in the Light of Scientific Investigation. A. S. Green. Discussed by K. Pischel, V. Hulen and H. Barkan.

BOOK REVIEWS

A Medical Dictionary For Nurses. By Amy Elizabeth Pope: 8 vo., cloth; pp. 288 + v. Illustrated. 1914. (G. P. Putnam's Sons, New York and London, Publishers. Price, $1.00.)

This book like others by the same authoress is handy, practical and sensible. The words and terms contained in it are defined in an explanatory and encyclopedic way. In addition to the dictionary the book contains a list of abbreviations, a table of chemical elements, notes on poisons and a number of useful numerical tables. L. E.

The Philosophy of Radio-Activity. Eugene Coleman Savage, M. D. (Published by Jenkins Co., New York, 1914.)

A book of 140 pages in which the author constantly juggles with such delightfully definite terms as the "Great Elusive Something that Changes," "Associative Force," "Explosive Secret," "Fenced Infinity," "Matter Invested with Compressed Duration," etc. He apparently attempts to explain malignancy as resulting from some slight variations in the action of the "Great Elusive Something that Changes" and concludes with the following statement: "We may say that the ultra material is the cause which orders the Associative Force and marks the Eternal Constants; and tendencies of unerring sureness and justice are retained in the non-material reservoirs of the cosmos."

The day of this type of philosophical treatises on medical subjects has long since passed and such a book adds nothing to medical knowledge or medical progress. W. W. B.

Diseases of the Skin, Including the Acute Eruptive Fevers. By Frank Crozer Knowles, M. D., Instructor in Dermatology in the University of Pennsylvania; Clinical Professor of Dermatology, Women's Medical College of Pennsylvania; Fellow of the College of Physicians of Philadelphia, etc. Octavo, 546 pages, with 199 engravings and 14 plates. Cloth, $4.00, net. (Lea & Febiger, Publishers, Philadelphia and New York, 1914.)

The author has produced a convenient handbook for students and general practitioners covering the various cutaneous and mucous membrane eruptions (including the exanthemata). It has been possible to condense the work within 526 pages by a judicious arrangement of the subject matter and by saving much space that is usually devoted to references. The writer has drawn largely from his extensive experience in the large Philadelphia clinics and from a broad knowledge of the literature up to date. The numerous black and white illustrations are excellent and the subject matter is instructive and well arranged. H. E. A.

A Text-book of Medical Diagnosis. By James M. Anders, M. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia and L. Napoleon Boston, M. D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia. Second edition thoroughly revised. Octavo of 1248 pages, 500 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00 net; half morocco, $7.50 net.

This edition, printed in June, 1914, contains 1193 pages of text. It is made up of eight main divi-

sions comprising diseases of the various systems and those due to animal parasites. One is impressed with the large number of facts given under each disease, but as they are well arranged, and are grouped under subheadings in heavy type, reading is easy, as is reference to any particular feature of the disease. Each disease has the following subdivisions, which are particularly pleasing: Pathological Definition, Varieties, Predisposing and Exciting Factors, Physical Signs, Laboratory Diagnosis, Clinical Picture, an Illustrative Case, finished with a Summary, and in many cases a table of Differential Diagnosis. For example, the several anemias and leukemias are contrasted side by side at the end of their descriptions. Probably the most pleasing feature is the wealth of good illustrations. They consist of photographie reproductions, line drawings, and colored plates. There are six full-page reproductions of motion pictures of the gait, etc., of such diseases as tabes, paralysis agitans, etc. A section is given to X-ray plates, reproductions and their interpretation in connection with each disease where radiograms are useful. Pulse tracings and electrocardiograms are illustrated and explained. The use of and findings with the esophagoscope and gastroscope are gone into at length.

On the whole, one feels that the authors have tried to cover too great a field in one volume, but the book certainly is of great value to the busy general praetitioner. E. H. C.

The Principles and Practice of Gynecology. For Students and Practitioners. By E. C. Dudley, A. M., M. D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Sixth Edition, thoroughly revised. Octavo, 795 pages, with 439 illustrations, of which many are in colors, and 24 full-page plates. Cloth, $5.00, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

The sixth edition of this deservedly popular text-book adheres closely in form to the preceding editions and is admirably brought up to date. A healthy conservatism is evident throughout. The illustrations are numerous and very good. The author is to be congratulated on confining his text to the subject in hand without invading the field of general abdominal surgery. However, the desire to restrain the volume to handbook size has caused the work to assume a sense of brevity that will restrict it chiefly for use as a student's text-book and for this useful field it is very well suited. It is especially to be recommended for the following features: Sound treatment, fully described; pathology well discussed; differential diagnosis exhaustively treated; and finally, that personal note that the experienced teacher introduces which serves to impress the student much more than the mere cataloging of facts. G. H. T.

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) for 1913. Octavo of 819 pages, 335 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.50 net.

This collection of reports is presented in the same form as in the preceding volumes. The book is clearly printed and well illustrated; the microphotographs are especially good. The drawings and photographs are for the most part new.

The list of contributors contains 28 names, some of which appear for the first time.

The papers are grouped under five general headings: (1) Alimentary Canal; (2) Ductless Glands; (3) Head, Trunk and Extremities; (4) Technic; (5) General Papers. The alimentary canal receives more extensive consideration than any of the other subjects. Duodenal and gastric ulcer and carcinoma are the chief topics of interest. They are presented from a clinical, operative and pathological point of view. The striking relation of gastric ulcer to carcinoma is again emphasized. The evidence presented is quite convincing.

Among other things, lesions of the breast are considered in the section on urinogenital organs. Here, just complaint is made about the number of conflicting and overlapping terms applied to diseases of the breast. A tabulated list of 147 names is given; 12 of these being applied to one condition (chronic cystic mastitis). This superabundance of terms is accounted for by lack of clinical knowledge on the part of the pathologist, and lack of pathological knowledge on the part of the clinician. Instead of relieving this congestion new terms are added to this already cumbersome list.

The section on ductless glands is devoted entirely to thyroid. The conclusions are drawn from clinical, experimental and pathological observations, the least important of which is the experimental. There is described a definite pathological basis for the clinical variations in diseases of the thyroid, so that from the pathological data the clinical stage of the thyroid disease can be told with 80 per cent. accuracy. This section is especially well illustrated by micro-photographs.

The section on technic is devoted largely to anesthesia. Here Miss Florence Henderson (R. N.), remarks that "nitrous oxid is an inefficient surgical anesthetic at best." At the same time she emphasizes that ether is the only reliable anesthetic. In the light of favorable reports on nitrous oxid from other large clinics, one wonders if her remarks are not prompted by lack of experience with nitrous oxid.

The section on head, trunk and extremities includes a variety of topics. The discussion of cervical rib is especially valuable, as the author reports 31 cases, giving detailed case reports. It is an unusual opportunity for one individual to observe so many cases.

As indicated by the title, this book is a collection of papers. Many of the articles are excellent, others are equally poor. The only excuse for the appearance of some of the latter is to make a complete collection of all reports from the Mayo Clinic. They contain nothing new, no case reports and are merely a reiteration of other articles. This repetition interferes greatly with the pleasure of reading the book. J. P. P.

A Text-Book of Military Hygiene and Sanitation. By Frank R. Keefer, M. D., Lieutenant-Colonel, Medical Corps, United States Army; Professor of Military Hygiene, United States Military Academy, West Point. 12mo of 305 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $1.50 net.

In the preparation of a text-book on any subject it is essential that conciseness, thoroughness and simplicity be so blended, that the most obtuse reader could readily absorb the author's standpoint. This book of Colonel Keefer's combines in an excellent degree these three qualifications. It is well paragraphed, making it easy for the instructor to assign a subject and to insist upon the student giving a definite, intelligent answer. For instance, the question of "Infection and Immunity" is found by the student on pages 60 and 61 in a paragraph of one hundred and fifty words, covering without any superfluous phrases a complete résumé of these important conditions and made plain by five small descriptive illustrations.

A personal acquaintance with Colonel Keefer leads me to expect that no small detail, bearing on a subject under discussion, would be overlooked. In this I was not disappointed, for, judging from the advice given upon how to properly sweep a room, stress is laid on the care of the corners, "as the middle of the floor will take care of itself."

His statement regarding the indifference to sanitary regulations of the average American volunteer is borne out by my own experience, and if we

should ever be engaged in a campaign of any magnitude I am sure this book, if properly studied and followed by our volunteer line officers, will be the means of saving many valuable lives.

I think that the book should be read by those who are placed in charge of lumber, mining and railroad construction camps. Also by Boy Scout leaders; for that matter, by any person who intends living out of doors for some length of time.

It is full of information concerning the best way of caring for oneself under these conditions and its teachings have been thoroughly tested and worked out by competent medical men who have specialized in this line.

The last chapters in the book treat on the use of alcoholics and the venereal disease problem. Colonel Keefer has had the opportunity of studying these questions first hand and gives a scientific, broad and practical discussion, free from the cant and hyperbole one finds in many of the recent articles on these subjects. G. H. R.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume III, Number 5. Octavo of 190 pages, 61 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published bimonthly. Price per year: Paper, $8.00; cloth, $12.00.

Contents:

Murphy's Clinical Talks on Surgical and General Diagnosis.

Traumatic Epilepsy.

Epithelioma of Glans Penis—Amputation.

Carcinoma of the Corona Penis with Metastasis in the Inguinal Glands.

Fecal Fistula.

Old Inversion Fracture of the Ankle. Open Reduction. Extra-Articular Nailing of the Fragments.

Inversion Fracture of the Ankle Treated as a Pott's Fracture By an Adduction Dressing.

Old Inversion Fracture of the Left Ankle Treated as a Pott's Fracture.

Old Pott's Fracture.

Removal of Nail from the Right Tibia and Os Calcis.

A Recent Report from an Old Case of Knee Arthroplasty.

Arthroplasty of the Knee for Bony Ankylosis.

Arthroplasty of the Elbow for Complete Bony Ankylosis Between the Humerus and Ulna in a Position of Complete Extension.

Hypertrophy of the Middle Lobe of the Prostate. Urinary Retention. Prostatectomy.

Imperforate Anus.

The Use of Radium and the X-Rays in the Treatment of Cancer.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since the publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

PASTEUR ANTIRABIC VACCINE.—The virus is prepared according to the method of the Hygienic Laboratory, Washington, D. C. A dose is sent by mail each day. Twenty-one to twenty-five doses constitute a treatment. Laboratory of W. T. McDougall, Kansas City, Kansas.

SOLUTION PITUITARY EXTRACT.—A solution of a purified extract of the posterior lobe of the pituitary gland of the ox. It is assayed so that 1 c.c. represents 0.2 gm. fresh gland. It is used by hypodermic or intramuscular injection mainly to stimulate the uterus contraction in labor. It is supplied in the form of ampules containing 1 c.c. solution Pituitary extract. The H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Dec. 5, 1914, p. 2043.)

ARBUTIN, Merck.—This brand of Arbutin has been accepted for inclusion with New and Nonofficial Remedies. Merck & Co., New York.

CUPRIC APPLICATORS (Copper Sulphate 20-25 per cent.).—Wooden sticks 6½ inches long tipped with a mixture of copper sulphate, alum and potassium nitrate, containing 20 to 25 per cent. copper sulphate. Antiseptic Supply Co., New York (Jour. A. M. A., December 26, 1914, p. 2290).

RADIUM SALTS.

RADIUM BROMIDE.—The market supply is a mixture of radium bromide and barium bromide and is sold on the basis of its radium content. It is sold for use in applicators, inhalatoriums and injection solutions. Radium bromide is marketed as:

RADIUM BROMIDE, Radium Company of America.—All deliveries are made subject to the test of the U. S. Bureau of Standards or any reputable expert designated by the purchaser. The Radium Company of America, Sellersville, Pa.

RADIUM BROMIDE, Standard Chemical Co.—Sold by the Radium Chemical Co., Pittsburg, Pa. (Jour. A. M. A., December 26, 1914, p. 2289).

RADIUM CARBONATE.—The market supply is usually a mixture of radium carbonate and barium carbonate and is sold on the basis of its radium content. It is sold for use in applicators. Radium carbonate is marketed as:

RADIUM CARBONATE, Standard Chemical Co.—Sold by the Radium Chemical Co., Pittsburg, Pa. (Jour. A. M. A., December 26, 1914, p. 2289).

RADIUM CHLORIDE, Radium Co. of America.—This form of radium chloride has been accepted for inclusion with New and Nonofficial Remedies. Radium Co. of America, Sellersville, Pa.

RADIUM SULPHATE, Radium Co. of America.—This form of radium sulphate has been accepted for inclusion with New and Nonofficial Remedies. Radium Co. of America, Sellersville, Pa. (Jour. A. M. A., Dec. 26, 1914, p. 2290).

BETUL-OL.—Betul-ol is a methyl salicylate preparation advertised by E. Fougera & Co., New York, to physicians and indirectly to the public, as an external analgesic and anti-rheumatic. It was refused recognition by the Council on Pharmacy and Chemistry because the statements regarding its composition are vague, misleading and incorrect, because unwarranted therapeutic claims are made for it, because the recommendations are likely to lead the public to the self-treatment of rheumatism, with serious consequences (Jour. A. M. A., Dec. 12, 1914, p. 2149).

CYSTOGEN, CYSTOGEN-APERIENT AND CYSTOGEN-LITHIA.—Cystogen is the therapeutically suggestive name applied to hexamethylenamin, by the Cystogen Chemical Company, St. Louis, Mo. By means of extravagant claims, unwarranted assertions and pseudo-scientific arguments the Cystogen Chemical Company advises the use of Cystogen Aperient or Cystogen-Lithia or all three in a well nigh endless number of diseases. The promoters take good care that every Cystogen prescription is likely to spread the Cystogen gospel among the people. In announcing the rejection of these products the Council on Pharmacy and Chemistry calls attention to the conservative discussion of hexamethylenamin which appears in its publication "Useful Drugs" (Jour. A. M. A., Dec. 12, 1914, p. 2149).

ERGOAPIOL.—Ergoapiol (Martin H. Smith Co., New York) is a mixture put up in capsules, each of which is said to contain Apiol (Special M. H. S.) 5 gr., Ergotin 1 gr., Oil Savin ½ gr., Aloin ⅛ gr. Examination indicated that each capsule did not contain 5 gr. apiol but an oleoresin of parsley seed. The recommendations in the advertising matter invite its indiscrimate use. The Council on Pharmacy and Chemistry refused to

recognize this unscientific mixture of ingredients which has widely differing therapeutic effects (Jour. A. M. A., December 12, 1914, p. 2149).

GASTROGEN TABLETS.—These tablets, recommended by the Bristol-Myers Co., New York, to be used in connection with its other nostrum, Sal Hepatica, are said to contain pepsin, calcium carbonate, calcium phosphate and "aromatics." As patients who need an antacid do not need pepsin and vice versa the preparation is unscientific and the therapeutic claims made for it unwarranted. Gastrogen tablets were refused recognition by the Council on Pharmacy and Chemistry (Jour. A. M. A., Dec. 12, 1914, p. 2149).

IODALIA.—Iodalia (Geo. J. Wallau, Inc.) is claimed to be a valuable substitute for iodides. Examination in the A. M. A. Chemical Laboratory indicated that when administered it would act like ordinary iodides and that to obtain the equivalent of 20 gr. potassium iodide it would be necessary to give the contents of a one dollar bottle of Iodalia. Particularly reprehensible among the many unwarranted claims made is one which suggests to the public that Iodalia will protect against infectious diseases. The Council voted that Iodalia be refused recognition (Jour. A. M. A., Dec. 12, 1914, p. 2149).

IODOTONE.—Eimer and Amend, who market Iodotone, state that it is a glycerin solution of hydrogen iodide, containing 1 gr. iodin to each fluidram. While Iodotone must act like ordinary iodides and while nearly one ounce of glycerin must be swallowed to obtain the equivalent of 10 gr. potassium iodide, the unwarranted claims are made that Iodotone is superior to iodides. Because of misleading claims and because the name Iodotone is likely to suggest its use as a general tonic, Iodotone was refused recognition by the Council on Pharmacy and Chemistry (Jour. A. M. A., Dec. 12, 1914, p. 2149).

NOURRY WINE.—This wine, sold by E. Fougera & Co., is said to contain 12 per cent. alcohol and 1½ gr. iodin to the fluidounce in combination with tannin. Examination in the A. M. A. Chemical Laboratory showed that its action would be that of ordinary iodid and that the non-production of iodism is due to the small amount of iodin it contains. Claims are made which are prone to lead to its use both by the profession and the public in conditions in which effective medication is called for. The Council on Pharmacy and Chemistry refused recognition to Nourry Wine (Jour. A. M. A., Dec. 13, 1914, p. 2150).

WARNER'S SAFE REMEDY.—"Warner's Safe Remedy for the Kidneys and Liver and Bright's Disease" is reported by the A. M. A. Chemical Laboratory to contain alcohol, by volume, 14.40 per cent., glycerin, by weight, 7.72 per cent., potassium nitrate 1.75 per cent. and vegetable extractives. This preparation consists essentially of alcohol and potassium nitrate. Alcohol is contra-indicated in inflammatory diseases of the kidneys and potassium nitrate is a kidney irritant. Sufferers from kidney diseases who take Warner's Safe Remedy will shorten their lives (Jour. A. M. A., Dec. 19, 1914, p. 2246).

CYPRIDOL CAPSULES.—Cypridol capsules, sold by E. Fougera & Co., New York, are stated to contain mercuric iodide dissolved in oil. The Council on Pharmacy and Chemistry refused recognition to Cypridol capsules because they were sold under unwarranted therapeutic claims and because they were marketed in a way to appeal to the public. If the capsules are once prescribed the directions on the bottle and the full instructions for the treatment of syphilis which accompanies the bottle is likely to lead the patient to attempt to treat his malady on his own accord and thus probably forfeit his chances of a cure. Physicians who want to use a solution of mercuric iodide in oil, should have their pharmacist prepare it for them (Jour. A. M. A., Dec. 19, 1914, p. 2247).

INTESTINAL ANTISEPTIC W-A.—The Abbott Alkaloidal Co., advertises Intestinal Antiseptic W-A as ". . . A scientifically blended and physiologically adjusted mixture, of the pure sulphocarbolates of calcium, sodium and zinc, grs. 5, with bismuth subsalicylate, gr. 1-4 and aromatics." The Council on Pharmacy and Chemistry refused recognition to this proprietary because the formula does not indicate the proportionate amounts of the several sulphocarbolates, because the name is therapeutically suggestive and an invitation for the use of the preparation by the public and because exaggerated therapeutic claims are made for it. The claims which are made are most extreme; they contrast sharply with the low esteem in which the phenolsulphonates (sulphocarbolates) are generally held. It does not appear that the claims have been substantiated by proper evidence (Jour. A. M. A., Dec. 19, 1914, p. 2247).

KELLER'S TUBERCULIN TEST PLATE.—This appears to be an attempt to exploit the Moro tuberculin ointment. The test does not discriminate between active and latent tuberculosis. As most adult persons have experienced tubercular infection at some time in life, a large majority of persons will respond positively to the test (Jour. A. M. A., Dec. 19, 1914, p. 2250).

SOCIETY REPORT

BUTTE COUNTY.

The regular meeting of Butte County Medical Society was held at the offices of Dr. P. L. Hamilton, December 8th, at 8:30 p. m. The following members were present: Drs. Edward E. Baumeister, D. H. Moulton, P. L. Hamilton, C. C. Landis, M. P. Stansbury, Ella F. Gatchell; also Dr. Chiapella and Nellie Allen as guests. The annual election of officers was held: Dr. M. P. Stansbury, president; Dr. C. C. Landis, vice-president; Dr. Edward E. Baumeister, secretary-treasurer; Dr. D. H. Moulton, board of censors.

Dr. P. L. Hamilton presented a clinical case illustrating section of posterior nerve roots. After adjournment refreshments were served and a social time enjoyed. ELLA F. GATCHELL, Secretary.

CALIFORNIA PEDIATRIC SOCIETY, NORTHERN BRANCH.

The second meeting of the California Pediatric Society, Northern Branch, will be held on Thursday evening, February 18th, in the County Medical Library at 8:15. The program will be as follows:

1. Studies in Spinal Fluid of Tuberculous Meningitis. Alfred Edward Mevers; 20 minutes.
2. Vital Statistics and Birth Registration. Allen F. Gillihan; 10 minutes.
3. Report of a Case of Tumor of the Spinal Cord in a Child of Eighteen Months—with autopsy. Rachel L. Ash; 15 minutes.
4. Diagnosis, Treatment and Management of Diphtheria. Arthur A. O'Neill; 20 minutes.
5. Preliminary Report of the Schick Diphtheria Toxin Reaction. Harry Emerson Foster and William Palmer Lucas.

It is hoped that anyone interested in child welfare problems will come to this meeting and join the society. We will welcome all who are really interested in any phase of child welfare work. WILLIAM PALMER LUCAS, Secretary.

MONTEREY COUNTY.

At a meeting of the Monterey County Medical Society, held at the Hotel Abbott, Dec. 18, 1914, the following officers were elected for the ensuing year. Dr. H. N. Yates, Pacific Grove, President; Dr. J. A. Beck, Salinas, Vice-President; Dr. W. L. Teaby, Monterey, Secretary; Dr. John Parker, Sa-

linas, Treasurer; Dr. W. A. Lillie, Monterey, Censor; Dr. Garth Parker, Salinas, Delegate; Dr. W. A. Lillie, Alternate.

HEZEDIAH CRABTREE, Secretary.

RIVERSIDE COUNTY.

At the regular monthly meeting of the Riverside County Medical Society, held in Beaumont, on December 14th, the following officers were elected for the year 1915: President, Dr. E. H. Wood, of Arlington; Vice-President, Dr. F. D. West, Beaumont; Secretary and Treasurer, Dr. George E. Tucker; Delegates to State Medical Society—Dr. H. R. Martin, Dr. John C. King; Alternates to State Medical Society—Dr. G. E. Tucker, Dr. C. S. Dickson.

GEORGE E. TUCKER, Secretary.

SAN FRANCISCO POLYCLINIC SOCIETY.

The San Francisco Polyclinic Society held its regular meeting December 12, 1914, at the annual dinner, St. Germain's Restaurant. The usual scientific program was dispensed with. Election of officers for the ensuing year took place. The following officers were elected: President, Dr. A. J. Zobel; vice-president, Dr. W. E. Stevens; secretary-treasurer, Dr. Harry P. Robarts. Among the many speakers the following responded to toasts: Drs. H. Horn, M. Regensburger, H. L. Wagner, M. Krotoszyner, F. B. Carpenter, W. E. Stevens, H. A. L. Ryfkogel, McPheters, Taubles, Conlan, and S. Blum. Dr. Zobel acted as toastmaster.

HARRY P. ROBARTS, Secretary.

SANTA BARBARA COUNTY.

The Santa Barbara County Medical Society met in regular monthly session at the Arlington Hotel on Monday, Dec. 14, 1914. It was called to order by the President, Dr. William H. Flint, at about 8:15 p. m. The Secretary, Dr. William T. Barry, at his desk. There were present: Drs. Bakewell, Barry, R. Brown, Campbell, Cunnane, Flint, T. A. Stoddard, Wells, Wright, and visitor, Dr. C. S. Stevens of Santa Barbara, a total of nine members and one visitor. Clinical cases being the first in order, the following gentlemen reported: Dr. Bakewell, an interesting and important case of basal fracture; slow recovery without operation. Dr. Campbell related two cases of mania a pótu, one of which proved fatal. Dr. Barry gave his experience in a recent case of profound and alarming shock (as contrasted with syncope) attending upon a very trivial operation. Dr. T. A. Stoddard, appendicitis complicating pregnancy, operation, recovery.

Following these clinical case reports came the paper or discussion of the evening, "Management of Pott's Fracture," by Dr. Rexwald Brown. The main points dwelt upon by the doctor were the clinical evidences of a true Pott's fracture, eversion of foot, etc. He claimed that many cases diagnosed as Pott's were not really so. Considerable discussion followed. The Chair then called for unfinished business, which was duly adjusted. There was also discussed the scientific advisability of securing the presence of specialists in different lines of practice at the meetings. Adjourned.

WILLIAM T. BARRY, Secretary.

SANTA CLARA COUNTY.

At the annual meeting of the Santa Clara County Medical Society, held on December 16th, the following officers were elected for the year 1915:

President, Dr. Charles M. Richards, San Jose; First Vice-President, Dr. James Blair, San Jose; Second Vice-President, Dr. T. M. Williams, Palo Alto; Third Vice-President, Dr. John Clark, Gilroy; Treasurer, Dr. H. J. B. Wright, San Jose; Secretary, Dr. Charles B. Hare, San Jose; Delegates to the State Convention—Dr. Charles B. Hare (one year), Dr. N. H. Bullock (two years), Dr. A. J. Bacher (two years).

CHAS. B. HARE, Secretary.

VENTURA COUNTY.

The Ventura County Medical Society held a meeting on December 29, 1914, and elected the following officers for 1915: President, H. B. Osborn, Fillmore; vice-president, Will J. Lewis, Ventura; secretary-treasurer, R. W. Homer, Ventura; delegate to state meeting, W. R. Livingston, Oxnard; alternate to state meeting, B. E. Merrill, Santa Paula.

H. B. OSBORN, Secretary.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

At a called meeting of the Washoe County, Nevada, Medical Society December 28th, the Legislative Committee was asked to continue the investigations relating to Medical Defense, and to have a complete report ready for the next annual meeting of the State Association.

Dr. J. T. Reese, of McDermit, sustained a fracture of the wrist recently while cranking his automobile. He is at Winnemucca for treatment.

Dr. W. D. Row, of Sparks, is relieving Dr. Coates, of Loyalton, Calif.

STATE HEALTH CREED.

Does not this new degree of "graduate in public health," announced by the University of California, come dangerously near an official establishment of religion? For these students are going to be instructed in the scientific school of sanitation, and they are going out to impose that sect on the public administration of communities. Have we any more right to establish the scientific health school over the unscientific than we have to establish a rational religious sect over the irrational ones? Not if the two cases are analogous—which is what most of the discussion assumes.

For instance, these students will be taught, and

will afterward put into practice, the dogma that malaria is transmitted by mosquitoes, and they will set communities to work draining swamps, screening cisterns and kerosining pools, to stop the malaria. It will stop the malaria all right—but how about the creeds of other sects, which declare that malaria is caused by "wrong thoughts," or twisted spines, or is a variant of the itch? Shall we establish one of these sects above the other, merely because it happens to be founded on scientific knowledge? These students will fight tuberculosis with fresh air and nutritious food. The particular sects which object to quinine for malaria mostly agree with this treatment of tuberculosis. But there are other very numerous groups which exclude fresh air in tuberculosis cases, for fear of "catching cold," and put their faith in whisky. And there are numerous groups which object to nutritious food—one sect bars meat and another all cooked food, and another prescribes starvation for all ills, including hunger. Shall these creeds be denied that public recognition which is granted to the rival faith of science?

The scourge of smallpox has been banished from the civilized world by vaccination. Typhoid has been banished from armies by protective inoculation; the ravages of diphtheria have been minimized by antitoxin; and hog cholera is being banished by immunizing serum. But there are sects which attribute the cholera to the imperfect apprehension of divine truth by the mortal mind of the hog, and would cure it by reading to the hog spiritual admonition out of a book. There are those who assert that there is no such thing as diphtheria; it is merely a name for a group of unrelated symptoms, one of which can best be treated by spilling a drop of belladonna into Lake Michigan and then administering a spoonful of Chicago water every hour. And why combat typhoid by patrolling watersheds, excluding flies, and inoculating soldiers, when the real cause of the outbreak of cholera in camps is the sudden and simultaneous displacement of the fourth lumbar vertebra of all the soldiers?

All these things are believed, preached and practiced. And yet, in the mere name of experience and science, it is proposd to establish as a public institution, another sect which has nothing in its favor except that it is true. Is not this an establishment of religion, forbidden by our fundamental law and by the genius of our institutions?

If the common analogy holds good, it certainly is. If there are sects, creeds, or schools in the doctrine and practice of health and disease, analogous to the sects which we mutually tolerate in matters of religion, then this new University degree is an infringement of liberty of faith. It is the establishment of science as the orthodox dogma of the state—that is, if the analogy holds.

And if it does not hold (which it doesn't)—then what is the meaning of all the rest of the arguments for "medical freedom," every one of which is based on just this false analogy, and on nothing else?—Fresno Republican.

THE MEDICAL ASSOCIATION OF THE ISTHMIAN CANAL ZONE.

It is the desire of the Medical Association of the Isthmian Canal Zone to be represented at the Panama-Pacific Exposition, to be held in San Francisco during the year 1915.

It was decided at the November meeting of the Society to hold an extraordinary session at the Exposition some time during the Medical Period, which begins June 13th and ends July 3rd. The most desirable time appears to be the week beginning June 14, 1915, as this date is near the meeting to be held by the American Society of Tropical Medicine, and the meeting of the American Medical Association.

It seems appropriate that our Society should be represented, and it is therefore earnestly requested that all former and present members will endeavor to assemble at San Francisco during that week, and be prepared to support those in charge of the session.

Former members who now live near San Francisco will be asked to take the lead in perfecting the plan and as soon as the temporary chairman can be appointed, the members are requested to get in early communication with him and express their intentions in regard to attendance, and also offer any suggestions in regard to making the extraordinary session a success.

Due notice will be given as soon as the temporary chairman can be named. H. C. CLARK,
Secretary-Treasurer, Ancon, C. Z.

POISONOUS FLY DESTROYERS.

The December issue of the Journal of the Michigan State Medical Society calls attention editorially to the danger of using poisonous fly destroyers.

From July 1 to October 15, 1914, 45 cases of poisoning of young children were reported in the press of a few states and it is pointed out that the symptoms of arsenical poisoning and cholera infantum being very similar there are possibly many more cases of the kind. It might be well in view of this danger for physicians to eliminate the possibility of arsenical poisoning before diagnosing a case as cholera infantum. A few years ago there was considerable agitation against the use of phosphorous matches, partly because of some children being poisoned by eating or sucking the heads of the matches. There are doubtless many more cases of poisoning from the poisonous fly destroyers. Phosphorous matches have been abolished, so should be poisonous fly destroyers.

It seems this danger has already been recognized by the authorities in far away South Africa and the sale has been forbidden, except by licensed chemists, of certain arsenical fly destroyers, more particularly the tin boxes which have a wick or wicks through which the poisoned water is drawn. The fact that sugar is added to draw the flies makes these boxes especially dangerous to young children; furthermore, all these poisonous fly destroyers are usually placed on the window sill and children as well as flies are attracted to the windows and the poisons are thus within their reach.

Both the blotting paper impregnated with arsenic (which is put in an open saucer with water and sugar), or the tin boxes with wicks to draw the poisoned water to the surface, are extensively used, and there is probably no poison so commonly and unnecessarily used where it is perforce within the reach of young children as these various arsenical fly destroyers. In country homes where it often takes some hours to get a physician, and even in our cities among the foreign born, where the parents are, as is well known, slow to call the services of a physician for childish ailments, the danger is especially great. There are as effective and more sanitary ways of killing flies. Poisonous fly destroyers are an unnecessary evil and should be relegated to the past like the phosphorous match.

SERUM FOR INFLUENZAL MENINGITIS.

A fresh supply of the serum for influenzal meningitis, from the Rockefeller Institute, is at the Lane Hospital. As the supply is very limited, a confirmed diagnosis by bacterial examination is necessary before it may be used.

DEATHS.

Mattner, Ernest H., San Francisco.
Shaw, Frederick E., Sacramento.
Lasher, Geo. W., Los Angeles, Cal.
Kugeler, H. B. A., San Francisco.
Wadsworth, C. C., San Francisco.
Stallings, F. L., Lindsay, Cal.
Robb, Lewis Griggs, San Francisco.
Manson, Peter, Fresno.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII MARCH, 1915 No. 3

EDITORIAL NOTES

THAT FEDERAL DRUG LAW.

Some of our readers may have overlooked the notice and warning in the last issue of the JOURNAL, for while we know it to be a fact that the pages of the STATE JOURNAL are widely read, we do not by any means believe that every issue is read in every page by every recipient! The law goes into effect March 1st, 1915, and it requires every druggist, physician, dentist and veterinarian to secure from the Collector of Internal Revenue of the district in which he lives, a Federal license to have in his possession, use, give away, sell or prescribe any opium or coca or any derivative or mixture thereof or containing any such article. It is very wide, very far-reaching and very drastic and the penalties attached to its violation are very severe. The license fee is small—only $1.00—but it must be paid and a license secured every year so long as the law lasts. If you write a prescription for any mixture or preparation containing any salt of opium or coca—cocaine, heroin, morphine, etc.—the druggist cannot fill the prescription unless he has a license from the government, nor unless you have a license as well. It is unlawful for you to carry a hypodermic case with hypo tablets for emergency work, unless you have a Federal license to do so. It is unlawful for you to have in your office any of these sedative drugs, unless you have a Federal license. Conference with some leading pharmacists discloses the fact that they intend to follow the law very literally; it is no joke to get into trouble with Uncle Sam. This is going to create a great deal of friction between physician and pharmacist unless the physician realizes that the law is the law and that he may not, practically, continue to practice his profession after March 1st unless he has applied for and secured the Federal license under the Harrison law. If you do not wish to be in hot water all the time, and have many unpleasant controversies with pharmacists, be sure to apply for your license before March 1st. You will not receive this number of the JOURNAL till after that date, so if you have not already got your license, get it at once. Any lawyer or banker can find out the name of the Collector of Internal Revenue of your district, and to him you should apply without delay. It is an annoyance, to be sure, but it is the law and it is easier and better and less annoyance to comply with it than to try to evade it. Inquiry at the Custom House in San Francisco, early in February, revealed the fact that the employes there were aware of the law but had received no instructions, blank forms, etc. Nevertheless, even if the government is a bit slow in getting its machinery to work, have your application in and on file and be sure that you are right and so protected. If you did not read the editorial notes on the subject in the February issue, get it and read them carefully.

THE EXPOSITION AND THE A. M. A.

The Panama-Pacific International Exposition opened as planned on February 20th, and in many ways it is without question the most remarkable and beautiful world's fair or exposition ever held. Of course you will wish to see it and of course you *will* see it. And if you can combine a pleasure trip with the object of seeing a thing so wonderful as the Exposition, with a profitable trip to yourself and your mental equipment, you will want to do so. That seems to be quite self evident. The American Medical Association will meet in San Francisco the third week in June—beginning June 21st. Now if you arrange your time sufficiently far in advance, you can go to San Francisco a week or so ahead of the meeting and see the Exposition and can also take in the scientific sessions of the A. M. A. Or you can come that week to the Exposition City, spend your time at the sessions of the A. M. A., and after the meeting, put in as much time as you can at the Exposition. There never has been an opportunity for you to get so much of profit and enjoyment out of one trip as you will have this coming June. Do not let it escape you.

OPINIONS REGARDING MEDICAL DEFENSE RULES.

A number of letters were written to members in various parts of the state, asking their personal opinion in regard to the rules established for the conduct of the medical defense work of the So-

ciety, and particularly the newer rules, such as requiring an X-ray plate to be held in the possession of the physician in all fracture cases, not suing to collect a bill for professional services till the account is at least a year old, letting the insurance companies carry their proper share of expense in case a member who is sued has insurance, etc. All the replies thus far received are about the same in tone and one writer's views will suffice for all.

> "Personally, I think the new rules of the Council regarding Medical Defense are just and fair to all. I can see no reason why the careful practitioners who constitute the great majority of members should be made to pay for suits brought against the careless members. I have heard no criticism from any member of this county society against the new rules and I believe they are entirely acceptable to us all."

In connection with this Medical Defense work, the remarks of one of our attorneys, referring to a very serious case, recently tried and so far won, are important. The case originated in an operation on a charity patient in a county hospital, as so many of these suits do originate—there seems to be plenty of charity *by* the doctor, but not much *for* him—and was very bitterly fought.

> "While speaking of this matter it occurs to me, as I have often thought of it before, that surgeons who are doing this charity work should be extremely careful to see that careful records are kept showing just what interns assist in the particular operation, and actually what part the latter take in the operation. Many such cases have come under my observation where the recollection of the surgeon was very weak and there was absolutely no record to show what part the assistants at the hospital actually took in the work."

If that is not common sense advice, what is it? Even though you are protected and the State Society will see that you are defended, it is not at all pleasant to be the defendant in such an action —aside from the notoriety, loss of time, etc. It is far easier to insist that proper records be kept and to have some document to refer to in the future, which will show exactly what was done and who did it; who operated, who closed the wound, who counted the instruments and dressings, etc., and who checked the count. Those things are all vital and many and many a suit has been based on the fact that such records did not exist and that much of the whole episode of the operation was merely a matter of hazy recollection. We must all be extremely careful ourselves, and so remove in so far as possible, every chance opening for an accusation that cannot be disproved; then these suits will grow less and less frequent and will in time be rare. But we must do everything to encourage and stimulate caution on the part of the physician and surgeon. Never forget the rule about an x-ray plate, no matter how trifling the fracture or dislocation may be. *Make an x-ray plate and keep the plate.*

A SUGGESTION FOR COUNTY SOCIETY WORK.

The following circular letter has been received from Dr. Richard C. Cabot, of the Massachusetts General Hospital, Boston, and it seems to offer an excellent suggestion for well directed work in some county medical societies. These case histories and reports of post-mortems considered and discussed in classes, are quite well known in the east and the idea has been taken up in San Francisco by Dr. Birtch of St. Luke's Hospital, with the enthusiastic support of a number of physicians in that part of the city near to the hospital. The subscription price is very small and the benefit to some of the county units where hospital material is not available would appear to be considerable.

> "For some years it has been the custom at the Massachusetts General Hospital to manifold each week the clinical records of the cases autopsied that week, and to discuss them with a group of students and graduate physicians. We read the clinical history, commit ourselves to the best diagnosis we can make, and then ask the pathologist to tell us what was found. Older physicians who used to attend these exercises have written me, asking that papers like that herewith enclosed might be sent to them by mail, so that by reading through the history, making their own diagnosis, and then turning over the sheet to learn the postmortem result, they might get some of the same training in diagnosis that is furnished us each week at the hospital.
>
> "The hospital is now considering the advisability of sending out four such printed cases each week to any physician who wants them. Duplication, printing, addressing, and postage of four cases a week will entail an expense of about $5.00 per man per year. The price will depend to some extent upon how many men care to try such an experiment, but it will certainly not be more than $5.00 a year.
>
> "In several cities both in and outside Massachusetts, printed cases like that enclosed have been used at the meeting of district medical societies, as a basis for a profitable diagnostic and therapeutic discussion. This makes unnecessary the preparation or reading of set papers, and sometimes furnishes a very interesting evening. In other places, small groups of men have met for discussion of the cases without any more formal organization.
>
> "If you would care to have me send you these cases, I shall be glad to hear from you.
>
> "Yours sincerely,
>
> "Richard C. Cabot."

THE VIAVI FRAUD ONCE MORE.

One of the leading Eastern weeklies has started a series of articles on patent medicine and allied frauds and in a recent issue refers most indelicately to those distinguished citizens of San Francisco, the Law brothers, and their fake and fraudulent stuff, "Viavi." The publication mentioned was so shameless as to place these multimillionaire citizens and directors of banks and Y. M. C. A.'s and Hahnemann hospitals and things, in the same class with the scum of male humanity that lives on the prostitute's earnings—as panderers of a different sort and higher social stratum. How positively shocking!

HEARING ON MEDICAL BILLS.

The following is a long-hand report of the proceedings at a public meeting held by the Assembly Committee upon Medical and Dental Laws in the Assembly Chamber January 28th, 8 p. m. There appeared before the committee as proponents of Assembly Bill No. 593, Drs. Daniels, E. Merrill and H. W. Forbes. This bill provides for amendment of the present Medical Act by striking out the words "approved by the board" in Sections 9 and 10 and by inserting in Section 1, a clause: "No more than three members of the board shall be of one school of practice"; this amendment also does away with college year of physics, biology and chemistry. The other provisions of 593 were not particularly dwelled upon. Dr. Daniels said in part: "The present board is unfair, (1) because in a letter, Dr. Alderson, the president of the board, has stated there is no definite rule for action by the board in approving medical schools; (2) because before the June, 1914, examination three graduates of the Los Angeles College of Osteopathy took the physicians' and surgeons' examination and two passed. After the June examination, when it was possible for the board to find out which applicants were osteopaths and which were not, only fifteen out of fifty-five passed, and upon one occasion a "regular" failed all but one out of twenty-eight. The present course of instruction in osteopathic schools complies with the law and unless relief is given this intolerable unfairness, the largest medical college west of Chicago will be compelled to close its doors.

The only cause for refusing recognition of this school was that "Pharmacology was not taught sympathetically." A portion of E. Merrill's remarks are as follows: We want the first year of the college grade removed from the preliminary requirements for the following reasons: physics is not necessary, chemistry and biology are at present taught exhaustively in the present schools. These subjects are put in the law for unfair reasons, namely, the A. M. A. wants to limit the number of doctors, because there is at present too much competition. That is an insult to you and me, because it prescribes the sort of doctors that you have to employ. Seventy-three per cent. of the children go through grammar school, five per cent. go through high school and one per cent. through the university. The poor boy has no chance to become a doctor unless it is made attainable. Two-thirds of the doctors who are before you asking for a higher standard for graduates, graduated from a school not as good as these osteopathic schools. Dr. Forbes, president of the College of Osteopathy: In 1907 conjoint was formed and all graduates of all schools admitted. In June, 1914, for a perfunctory examination graduates of osteopathic schools were denied the right of taking the examination. These schools give 5,000 hours work. I wrote Dr. Alderson what his requirements were, he replied honestly that the board had no definite rules to guide it, therefore we want to substitute for the words "approved by the board" the clause: "That the board must receive for examination all graduates who appear and have graduated from a school which gave the course called for by law." Up to this time the high school graduation has been a requirement for admission to the schools. We object to the year of chemistry, biology and physics, because it is higher than the A. M. A. We do not ask to reduce the number of hours below 4,800. The Board of Medical Examiners are going to ask to reduce it to 4,000. We do not wish to lower the standard, but we wish to have a definite yardstick to relieve ourselves of the caprices of the Board of Medical Examiners.

The above remarks are printed without comment, for they seem to be self-explanatory; the osteopath is no longer desirous of being merely an "Osteopath"—he wishes to be, also, a physician and surgeon. Of course the "Medical Trust" is persecuting him, for its own base ends!

PLENTY OF GOOD WATER.

It is absolutely essential to the life of a city that it shall have an ample supply of pure water. Los Angeles recognized that fact long ago and spent many millions on the project of bringing an abundant water supply over mountain and desert into its homes. San Francisco has been talking a great deal about a municipal water supply and some small-minded agitators have delayed all action for years. At last something definite in the way of an agreement has been secured, as set forth in the following communication, and certainly physicians should realize more fully than other citizens, and should therefore make it their duty to explain the importance of the matter to them, that a bigger and better water supply is vitally essential to the life and growth of San Francisco.

> "Mayor Rolph and the Advisory Water Committee have decided that the question of the purchase of the Spring Valley Water Company shall be voted on by the people in the latter part of April next. San Francisco has been pinched for a number of years owing to a lack of water. According to government figures the three cities across the bay have grown at the rate of 5 per cent. per year while San Francisco has grown at the rate of but 1.9 per cent per year. The lack of water in the outlying districts is held to be largely responsible for this condition. Doctors and members of the medical profession are as much interested in the growth of the city, and more particularly in an abundant supply of good water, as almost any other class. Spring Valley and the city have come together on a purchase price of $34,500,000.00. After an expenditure of over $100,000.00 by the city in making an appraisement of these properties, the city's advisers have decided that it would be better to purchase at this figure than attempt to get it for any less through court proceedings."

ASSEMBLY BILL NO. 923.

A little over a year ago we commented editorially on the advisability of forming union health departments in order to secure full time health service for small communities. The suggestion, advanced at that time, has borne fruit in the form of a bill which comes before the present legislature endorsed by the League of California Municipalities.

Assembly Bill No. 923 will at once commend itself to every physician thoughtful enough to realize the powerful weapons which we are furnishing for our own undoing by our present shiftless methods of public health administration. A few comments on the bill are in order:

1. The bill provides for the union of small counties into health districts with a minimum of 20,000 population but no county is subdivided.

2. Over each of these districts is placed a health officer who is compensated in part by the state and in part by the district. This makes the officer a state employee in fact, and therefor subject to state regulations.

3. The district health officer must be trained in the profession of public health, must pass an examination, and must give full time to the service of his district.

4. The bill further provides that any incorporated city in the district may call upon the district to provide a health administration for that city, but the city is not compelled to surrender its health administration. Political economists tell us that the county is the most efficient unit of government and it should not be hard to convince any small city that it would be sound business policy to surrender its health administration to the county or district.

5. The bill is not advanced in the interests of any "school of medicine." Indeed the medical degree is not prerequisite for appointment to the position of district health officer.

6. The bill does not create any new machinery, nor does it carry a large appropriation.

7. The district health officer would be beyond the suspicion of professional competition with medical men and would therefor receive a cordial support now unfortunately lacking.

The bill has been well endorsed, but its progress can be furthered by personal effort. Let every physician who believes in efficient public health administration work for Assembly Bill No. 923 and its Senate duplicate. J. N. F.

INCOME TAX.

Late in January, a circular of information was received calling attention to the required filing of an information blank in the matter of the income tax, before March 1st. It was too late to mention the subject in the February issue, then on the press. Why cannot our beneficent Federal government give us a little more notice about these somewhat important things? The return is supposed to be made before March 1st, and one month's notice is not very liberal; people forget things and have to be reminded, sometimes.

EXPERIENCE IN ADVERTISING; A FACT.

Some time ago the Society bought a lot of binders which can be quite easily used by any one to bind the numbers of the STATE JOURNAL as they come along, and at the end of the year have the whole volume permanently bound with a good, strong, serviceable binding; one that will last a life-time and look well on your shelves. From time to time, as we have available space in the advertising pages of the JOURNAL—for sometimes there is a half-page or a page that is not taken and we do not like a blank page—we insert an advertisement of these binders which we sell at sixty cents, postage paid; just about cost. It has been quite interesting to watch this for the last couple of years. Never has the advertisement of these binders been inserted in an issue of the JOURNAL that a reply did not come from it. Every time we have run the ad, at least one, and from one to a dozen subscribers, have written to the JOURNAL, enclosing the money and asking for the binders. Evidently it pays to advertise—if you advertise something that the reader wants; but he does not always want what you try to make him want badly enough to buy!

American

Medical Association

MEETS

San Francisco

June 21, 22, 23, 24, 25, 1915

COME!

ORIGINAL ARTICLES

DYSTOCIA DUE TO A FUNNEL PELVIS.*

By J. MORRIS SLEMONS, M. D., San Francisco.
(From the Woman's Clinic of the University Hospital.)

The frequency of contracted pelves and the effect they have upon the course of labor are questions dealt with extensively in obstetrical literature, but with a few notable exceptions monographs upon these subjects consider only deformity of the superior strait. Text-books, also, emphasize contraction of the pelvic inlet. Thus, the importance of making the familiar pelvic measurements several weeks before the expected date of confinement has become established and, furthermore, the value of these measurements is constantly demonstrated by the experience of every physician who has adopted the precaution of taking them. However, at the time of the antepartum examination the study of the pelvis should include observations regarding the inferior strait. Without this knowledge, the physician will occasionally be unable to explain a prolonged delay in the second stage of labor almost at the moment when he is expecting delivery to take place.

In the conduct of labor, as soon as the head becomes deeply engaged we are apt to assume that all danger of serious pelvic dystocia may be disregarded; and, generally, whenever the head becomes visible at the vulva, we feel that delivery can be delayed only by a rigid perineum. But this is not the case, for the expulsion of the fetus may also be hindered by narrowing of the pubic arch. A patient presenting this deformity was lately treated at the University Hospital. In the first place I wish to present to you an outline of her history, and then I shall speak briefly of the frequency of funnel pelves and of the most satisfactory ways of dealing with them.

M. H. (Hosp. No. 6836). Age 30. Normal weight 120 lbs.; height 5 ft. 4 in. Married in October, 1910. No miscarriages. Has two children; one born in 1911, another in 1912. In both instances labor was protracted and finally was terminated by the use of forceps.

Patient registered at the University Hospital October 10th, 1913. She was uncertain about the period of pregnancy, for menstruation had not occurred since the birth of her last child (eight months before). From the level of the fundus of the uterus it appeared that pregnancy had advanced to the seventh lunar month and that her expected date of confinement was about the middle of January. Vaginal examination showed marked perineal relaxation, the tear having extended to the sphincter ani.

Pelvic Measurements. Interspinous 28¼; intercristal 29½; bitrochanteric 31; ext. conjugate 19; diagonal conjugate 10½; estimated conjugata vera 9 cm. The sacrum is palpable throughout and is composed of five vertebrae. The promontory does not jut out into the superior strait; it is even less prominent than usual. The tip of the sacrum projects backward to an extreme degree; both its "up and down" and "side to side" curves are obliterated; the type is that known as the "precipitate sacrum." Pubic arch is very narrow. Distance between the ischial tuberosities is 6½ cm.; antero-posterior diameter of outlet 12 cm.; anterior sagittal 6 cm.; posterior sagittal 10¼ cm.

Diagnosis: flat, rhachitic, funnel pelvis.

Labor. Jan. 29th pains began about 3 a. m. and three hours later the patient came to the hospital. Typical first stage contractions continued through the day. The membranes ruptured spontaneously at 5:20 p. m. and immediately the pains became very strong and frequent. The head entered the pelvis in L. O. A. and descended slowly. In about three hours it reached the pelvic floor and there remained stationary, in spite of well assisted, vigorous uterine contractions and the complete ab-

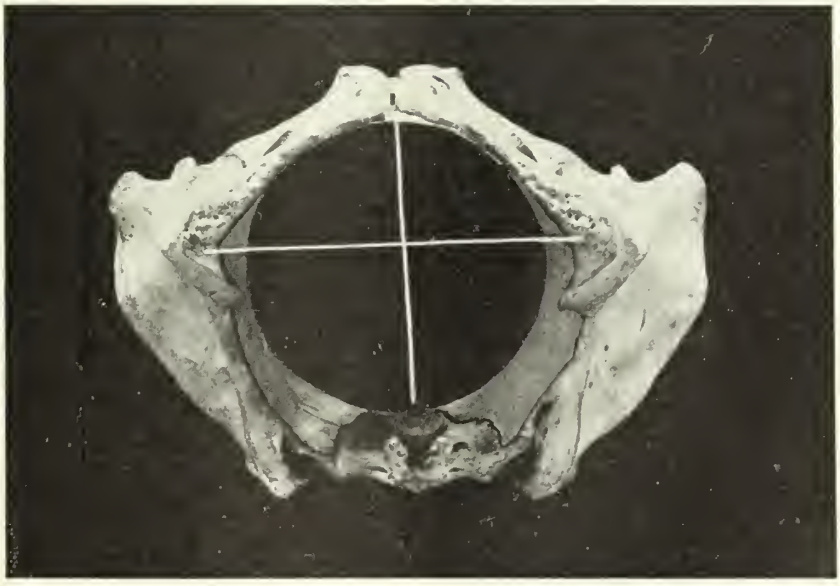

Fig. 1.** Photograph of normal Pelvic Outlet. Horizontal line represents the transverse diameter and vertical line the antero-posterior diameter. A clay diaphragm has been molded in the Plane of Least Dimensions and blocks from view the upper part of the birth-canal. The black disc indicates the area occupied by the foetal head as it passes through the normal outlet.

* Read before the San Francisco County Medical Society, August 4, 1914.
** For the illustrations I am indebted to Dr. A. W. Lee.

scnce of perincal resistance. After thc head had been visible for an hour the patient was anesthetized and delivered by a low forceps operation. The third stage was uncomplicated.

The duration of labor was 18¾ hours. First stage 14 hours and 20 minutes; second stage 4 hours and 10 minutes; third stage 15 minutes.

The operation was more difficult than an average low forceps. Vigorous traction was required and had to bc madc directly backward toward the coccyx. Betwcen the back of thc fetal head and the symphysis thcre was an unutilized space through which the edematous cervix protruded. Whèn the head was well engaged in the pelvic outlet the distance between the occiput and the symphysis was 6 cm.; from thc occiput to the tip of the sacrum was 10 cm. The head was expelled by pressure upon the fundus. On account of the pelvic deformity it was impossible to employ the Ritgen maneuver.

The child, a female, weighed 3860 gms. The diameters of the head were as follows: O. M. 14 cm.; O. F. 12; S. O. B. 9; S. O. F. 10½; BiP. 9; BiT. 7.5; Circumference (S. O. B.) 30 cm.

The child breathed as soon as it was born. During its stay in the hospital it was normal and at last accounts was well.

Puerperium. The mother had a normal convalescence and at the end of two weeks was discharged in good condition.

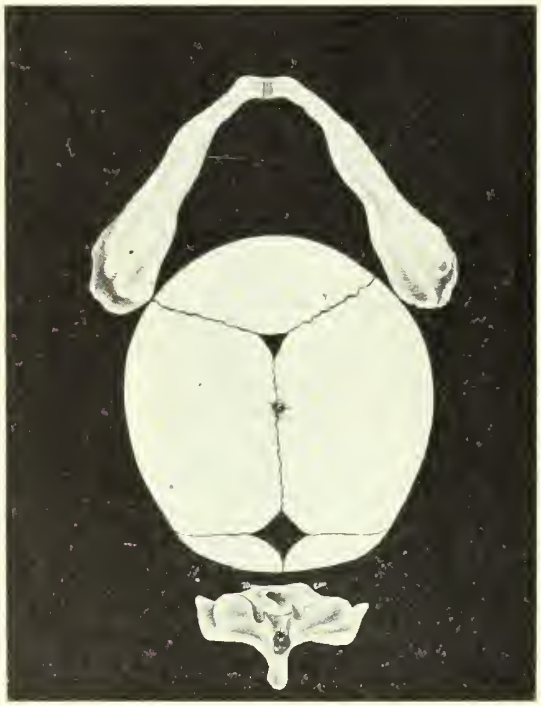

Fig. 2. Diagram showing the head in the position in which it passed through the pelvic outlet of the case reported.

In order to get in mind clearly the mechanical hindrance which in this patient has necessitated operative interference in three consecutive deliveries we must recall the mechanism by which the fetal head is normally accommodated at the pelvic outlet.

In normal cases by the time the head has reached the perineum it has rotated to assume the most favorable position for passage through the vulva. The small fontanella comes to lie back of the symphysis and the sagittal suture occupies the antero-posterior diameter of the inferior strait; thus, the fetal head fills out the space from one ischial tuberosity to the other and from pubic arch to coccyx. However, the mobility of the coccyx is such that in normal cases it offers no obstruction to delivery, and therefore the antero-posterior capacity of the pelvic outlet (Fig. 1) is measured from the bottom of the symphysis to the tip of the sacrum, a distance of 11½ cm. The distance between the ischial tuberosities (the transverse diameter of the pelvic outlet) is 10½ cm. Thus, ample room is afforded for the accommodation of the fetal head which has a sub-occipito-frontal diameter of 10½ cm. and a biparietal diameter of 9¼ cm.

In the case the history of which has just been given the diagrammatic representation of the pelvic outlet (Fig. 2) makes it plain that the ischial tuberosities were so near together that the head could not pass between them. In fact, at the time of delivery measurements were made showing that as the head passed through the outlet it did not come nearer than 6 cm. to the symphysis. Obviously, therefore, in estimating what hindrance to delivery a pelvis may cause it is a matter of great importance to determine the distance between the ischial tuberosities. And, if the bituberal diameter is contracted, it is also necessary toward reaching a prognosis to measure the distance from the middle of the line joining the tuberosities to the tip of the sacrum.

As to how near the tubera may approach without causing dystocia, there is a difference of opinion. But lack of agreement, I believe, is chiefly due to want of uniformity in selecting the points between which to measure. It is also due to the mobility of the tissues covering the tuberosities and to the variable amount of fat deposited in that locality.

The distance between the ischial tuberosities is somewhat shorter in living subjects than in the dried pelvis though not infrequently in thin individuals it measures 10½ cm. Furthermore, much shorter measurements are observed in cases where birth occurs spontaneously, and indeed no hindrance should be expected whenever the bituberal diameter is greater than 8 cm. This estimate is based on the mensuration of several thousand obstetrical cases where accurate observations of the outlet were made. On *a priori* grounds this is about the estimate that would be expected. A bituberal diameter of 8 cm., measured externally, corresponds to about 9 cm. within the pelvis and this space will accommodate the biparietal diameter of the head after moderate molding.

In exceptional cases delivery occurs spontaneously when the distance between the tubera is less than 8 cm., and, indeed, has been observed when the bituberal diameter was 7, 6, and even 5½ cm. Such results indicate that this measurement alone does not always give the information needed for a correct prognosis in cases of con-

tracted outlet. The other factor to be considered, as we have seen, is the posterior sagittal diameter, which is the distance from the tip of the sacrum to the middle of the line joining the ischial tuberosities.

The significance of the posterior sagittal diameter was ideally illustrated in the case just reported, for as the head passed through the outlet it was found to be entirely posterior to the ischial tuberosities. In other words the posterior sagittal diameter which measured 10¼ cm. accommodated the sub-occipito-frontal diameter of the fetal head. Obviously, a shorter posterior sagittal diameter (Fig. 3) would have materially altered the prognosis. In every case, therefore, where the bituberal diameter is 8 cm. or less it becomes

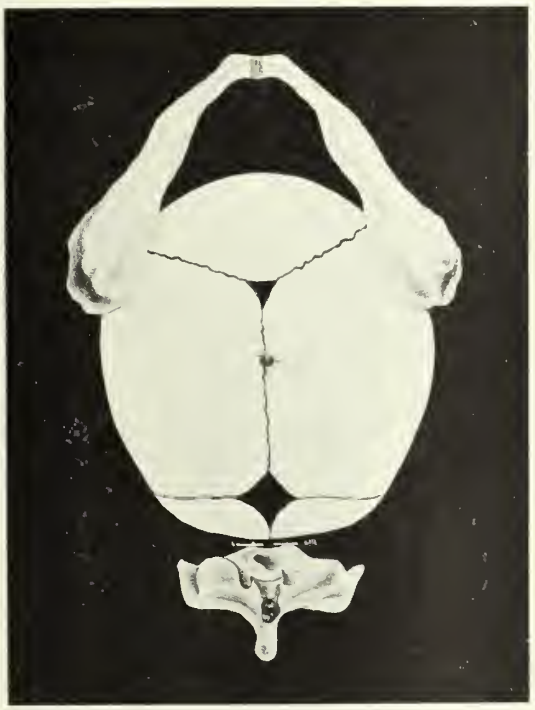

Fig. 3. Diagram of a contracted pelvic outlet with the same bi-tuberal diameter as in Fig. 2, but with a posterior sagittal diameter measuring 8 cm.

essential to estimate the available space between the line joining the tubera and the tip of the sacrum.

The variety of funnel pelvis presented by this patient was unusual, for the deformity was due to rickets. There was flattening of the superior strait, and a precipitate sacrum consisting of five vertebræ; and there was also characteristic evidence of rickets in the tibiæ and the ribs. Only two rachitic funnel pelves were encountered by Williams[1] in his systematic study of 2215 pelvic outlets. Generally, of course, rickets causes narrowing of the superior strait with compensatory widening of the inferior strait, but occasionally it causes also narrowing of the transverse diameter of the pelvic outlet. Rickets, lumbar kyphosis, spondylolisthesis, and osteomalacia give rise to a small group of funnel pelves which have been classified as "irregular types."

Typical funnel pelves are those in which the capacity of the superior strait is normal while the inferior strait has a transverse diameter of 8 cm. or less, or an antero-posterior diameter of 9 cm. or less. These typical cases are probably due to the presence of a high sacrum—one containing six vertebræ and known as "an assimilation sacrum." And just as the assimilation sacrum is the most common anatomical anomaly of the pelvis so narrowing of the outlet is the most frequent clinical variety of pelvic contraction. Typical funnel pelves were observed by Williams in about 6% of his obstetrical patients.

A third variety of contracted outlet is met with

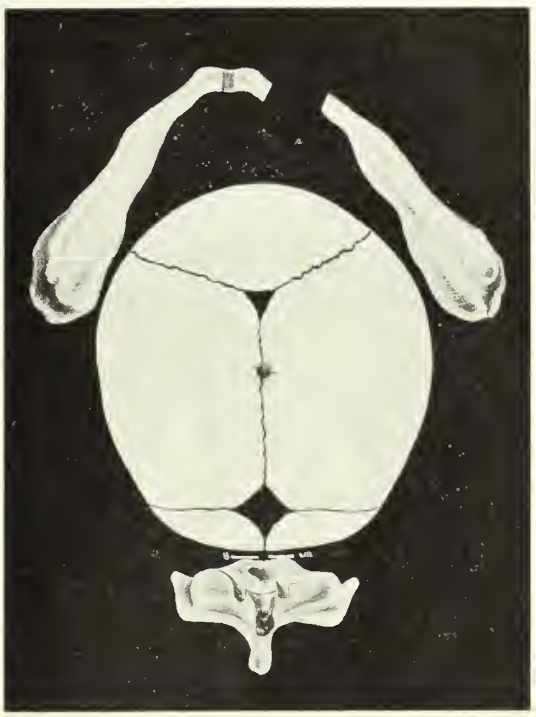

Fig. 4. Illustrates the effect of pubiotomy upon the pelvic outlet represented in Fig. 3.

in cases of generally contracted pelvis. Here together with all the other pelvic dimensions, the diameters of the inferior strait are shorter than normal. In white women this type occurs once in a hundred cases; in negroes it is more frequent.

Inasmuch as contraction of the pelvic outlet, including all varieties, occurs in about 7% of obstetrical patients it clearly follows that examination of the inferior strait should be made at the time of the preliminary visit, several weeks before the expected date of confinement. A good idea of the outlet may be had from palpating the pubic arch. When this is wide no further details are essential but, if narrow, all the dimensions should be measured. The diameters of the outlet and their normal clinical measurements are as follows: the bituberal or transverse diameter 10½ cm.; antero-posterior 11½ cm.; anterior sagittal 5 cm. and posterior sagittal 7½ cm.

[1] Textbook on Obstetrics by J. Whitridge Williams. Appletons. New York, 1912.

For practical purposes the important diameters are the transverse and the posterior sagittal. In a given instance the outlook for spontaneous delivery depends not so much upon the absolute measurements of either of these diameters as upon the relation they bear to each other. Thus, in cases of funnel pelvis where birth occurs spontaneously the posterior sagittal is found to have increased proportionately as the transverse diameter shortened.

Naturally, the management of labor in cases of funnel pelvis will depend upon the degree of contraction. Moderate degrees—cases in which the bituberal diameter measures more than 7 cm.—are generally corrected by an exaggeration of the posture which patients are wont to assume toward the end of the expulsive stage of labor. As the thighs are drawn up toward the abdomen and spread apart, the innominate bones rotate about the sacrum in such a way as to increase notably the capacity of the inferior strait. The most extreme lengthening of the posterior sagittal diameter, thus obtained, occurs when the patient is placed in the lithotomy position. At times merely placing a patient with a funnel pelvis in position for a forceps operation is sufficient to increase the capacity of the outlet so that birth may occur normally. Similar enlargement is brought about by the Sims' posture. In about two-thirds of the cases of funnel pelvis postural treatment results in normal delivery or establishes conditions permitting a satisfactory delivery with the use of forceps.

More marked degrees of outlet contraction are satisfactorily treated by pubiotomy. This procedure (Fig. 4) increases the length of the transverse diameter of the outlet between 1 and 3 cm., and thus often converts a contracted into a normal outlet. Furthermore, the fibrous union which usually takes place after pubiotomy enlarges the outlet permanently. So ideal is pubiotomy in the treatment of outlet contraction that Cesarean section should be performed only when the contraction is extreme, unless the patient happens to be an elderly primipara. In these circumstances Cesarean section should always be the operation chosen.

In conclusion, I may point out that one important, and perhaps the most important, cause of complete perineal laceration is contraction of the pelvic outlet. Whenever the distance between the ischial tuberosities is shorter than normal, the fetal head does not pass through the outlet in its usual position immediately back of the symphysis, but is displaced toward the coccyx; and the displacement may be extreme. In this position increased strain is thrown upon the perineum. Generally, in cases of complete perineal laceration criticism of the attending physician cannot be fairly directed to his lack of skill in guarding against lacerations but to the fact that he has overlooked the presence of a funnel pelvis.

Discussion.

L. I. Breitstein: I wish to state that funnel pelvis is one of the most common forms of abnormal pelves. With the permission of Dr. R. K. Smith, I wish to report a case that we had at the Mt. Zion clinic: a multipara, para IV, history of past labors as follows: First labor occurred six years ago at Washington, D. C. Was delivered by forceps, resulting in an extreme third degree tear through the sphincter. She has not been repaired and up to the present time suffers from incontinence. Second labor occurred two years ago at Lane Hospital. A Cesarian section was performed because a tumor of the ovary complicated the delivery. She applied at the Mt. Zion clinic for her third confinement. The examination then revealed a contracted outlet as the cause of all her trouble. The transverse diameter of the outlet measured 6 cm. while the posterior sagittal measured 7 cm. As she had a previous section, we thought best to again Cesarianize her. A baby was delivered weighing about 4000 gms.

R. K. Smith: I wish to express my appreciation of listening to a paper by a man who is prepared for obstetrical work. It is when we listen to such work that we appreciate the fact that there is room for improvement in our own work, and while I do not agree with this particular operation for the relief of this condition entirely, still it happens to be the one particular form of pelvic deformity in which, if we are going to do this operation at all, it is allowable to do it, namely, the operation of pubiotomy. While Professor Williams is quite enthusiastic about the operation, still it does not leave the woman in as good condition as she might be, owing to the fact that there is practically always a fibrous union at this particular location and therefore more or less interference with the locomotion. It is the only form in which it may be performed, because the child's head has already entered the pelvic cavity and rests on the wall of the perineum. The patient has probably been subjected to a number of vaginal examinations, perhaps efforts of instrumental delivery, and all of the possibilities of infection that come with manipulations in obstetrical cases.

INCREASED BLOOD PRESSURE.*

By JOS. M. KING, M. D., Los Angeles.

While the use of instruments to measure blood pressure can only be said to really date from about 1900, and indeed, has only become general in the last six or seven years, still it must not be forgotten that the method is somewhat older. Marey, in 1876, was the first to devise an instrument at all suited for practical purposes, but it was Von Brasch of Vienna who first, in 1887, perfected and adapted the sphygmomanometer to clinical use. His first instrument lacked accuracy and portability, so later Von Basch invented another model in which he made use of the aneroid barometer, connecting it by elastic tubing with a small rubber ball or pellotte, which was used to compress the artery. The pellotte did not prove very accurate, and usually gave too high readings, so Riva-Rocca, in 1896, introduced the use of a rubber bag encircling the limb and inflated with air by means of a bulb or pump. Since that time numerous modifications have been brought forward looking to portability, accuracy, etc., but there have been practically no changes in the principles of sphygmomanometery.

The only essential in the position of the patient when making a reading is to see that the com-

* Lecture delivered before the semi-annual meeting of the San Diego County Medical Society on July 8, 1914.

pressed artery is on the same level as the heart. The recumbent or semi-recumbent position is usually the most practical and convenient, which also allows full relaxation of the muscles of the arm, a most important point, as tensing of the muscles raises the reading considerably. Whatever position one uses, he should always use the same, as the readings vary with the erect and recumbent positions, being somewhat higher in the latter.

In taking a reading two factors should always be estimated: First, the point of maximum pressure in the artery, corresponding to the moment of forcible dilatation from the blood stream driven into it by the ventricular systole, the systolic blood pressure; and second, the point of minimum pressure existing after the onward flow of blood and just preceding the contraction of the ventricle, the diastolic blood pressure. The difference between these two represents the strength of the pulse, the so-called amplitude, or pulse pressure.

The diastolic pressure is the constant element in blood pressure, the load which the arteries must bear continuously; and its estimation is valuable in determining the amount of peripheral resistance. Other factors besides peripheral resistance must also be borne in mind, however, in making this estimation. A quickened heart action, for instance, allows less time between beats for the blood to pass from the arterial tree into the capillaries, and so raises the diastolic level, while a very slow cardiac action will act in an exactly opposite manner. A stiffening of the arterial tube as in arterio-sclerosis tends also for obvious reasons to heighten systolic and lower diastolic pressure. In this condition, therefore, a high diastolic pressure not accompanied by a rapid heart action is of the greatest significance as an indication of increased peripheral resistance.

We must not only take into account the mechanical effect which an increase of the diastolic pressure has upon the vessels, but we can also speculate on the efficiency of the capillary circulation in vessels thus constantly distended, with its consequent effect upon their nutrition.

The systolic pressure is the inconstant element, and permits us to estimate the amount of energy which the heart exerts, and the maximum strain which the vessels must undergo. The pulse pressure represents the actual systolic output of the heart—the actual force driving the blood into the peripheral vessels. It is evident, therefore, that a lessened pulse pressure indicates a retarded capillary flow—a diminished blood current through the tissues.

Three methods exist for making these estimations—that by oscillation, that by palpation, and that by auscultation.

The first method, the oscillatory, is mentioned only to be condemned when used with the usual clinical instruments devoid of method for graphic record. It consists in an inflation of the cuff to a point above maximum pressure, and noting the moment when the oscillations of the mercurial column or of the needle become more or less suddenly increased as the pressure is gradually allowed to fall. The reading at this moment is the systolic pressure. Then as the pressure gradually decreases a point is reached at which these maximal oscillations cease, which marks the minimal or diastolic pressure. But even with special contrivances such as a pithball in a glass tube attached to the sphygmomanometer to show these oscillations, the correct time of reading is too difficult of estimation, and the method is too inaccurate for general clinical use.

The palpatory method is very simple, possibly the best for systolic readings, but almost valueless for diastolic ones. The cuff placed over the arm is inflated until the radial pulse disappears, and then as the air is slowly released the very first reappearance of the radial pulse gives the systolic reading. The diastolic reading is made when, with falling pressure, the pulse becomes largest and most collapsing, a most difficult estimation to make, and one which gives rise to great subjective error.

The ausculatory method, first described and introduced by Korotkow in 1905 is undoubtedly the best of all, and is the only reliable method in clinical use for taking diastolic readings. When the bell of a stethoscope is placed over the brachial artery a little below the cuff (the artery should always be first palpated to determine its exact location) and the pressure raised above that necessary to obliterate the pulse, a series of sounds can be heard as the pressure is gradually released. The first is a sudden sharp clear tone indicating the first passage of the arterial stream beyond the cuff, and corresponds accurately with the systolic pressure. Shortly this sound becomes muffled and after an interval a second clear, sharp, cracking sound is heard which terminates, usually abruptly, in a blowing murmur, and after a further fall of about 5 m.m. all sound disappears. Much discussion has arisen as to whether the diastolic reading should be taken at the time of cessation of all sound, or at the transition of the sharp tone into the dull muffled one. A careful review of the literature leads to the belief, however, that the transition of sound from the so-called third phase to the fourth one corresponds most accurately to the diastolic pressure. Fortunately, this transition is usually abrupt, and so does not often give rise to confusion. Occasionally the change is not sharp, and then we will do well perhaps to remember that not a few good observers consider that the onset of sound is coincidental with systolic, and the cessation of all sound coincidental with diastolic arterial blood pressure.

For some unexplained reason, readings taken while inflating the cuff are usually a little higher than those with falling pressure after obliteration of the pulse. The latter seems to more nearly correspond to the true pressure in the artery, and is the method commonly used.

And what constitutes normal blood pressue? That depends on a variety of circumstances, of which age and sex are the most important. In the first years of life we find a systolic pressure of from 75 to 90, from 15 to 20 years the pressure rises from 105 to 120, while every decade thereafter raises the figure about 5 m.m. up to a maximum of about 150, which is recognized as the

upper limit of the normal pressure. In healthy adults the diastolic pressure varies from 60 to 95 or so, 80 being about the average, so that in a general way the diastolic pressure amounts to about 2/3 and the pulse pressure to about 1/3 of the systolic. In women the pressure is about 10 m.m. lower than in men.

Besides the two factors of age and sex many others enter, and must be taken into account to a greater or less extent. The most important of these is nervous excitement, which may cause surprising fluctuations, amounting up to 30 or 35 m.m. in a few minutes. After prolonged excitement of any kind, as in a heated discussion, the systolic pressure may register 50 m.m. more than will be shown the next morning after a refreshing sleep. I shall speak of pathologic nervous changes a little later. Posture also exerts a marked influence, the pressure increasing as the patient passes from a standing to a Trendelenburg position, the difference between the standing and the reclining positions being sometimes as much as 20 m.m. These then are the factors of greatest moment to be taken into consideration in our daily work, namely—age, sex, posture and mental excitement of patient. Many other factors, such as diurnal and periodic variations, size and muscular development of the patient, sleep, diet and digestion, external temperature, altitude (except in tuberculosis), climate and race, are of scientific interest, but in practical work may usually be ignored.

Exercise has a marked effect on the blood pressure. In healthy adults the systolic pressure and also the pulse pressure (or amplitude) are greatly increased by vigorous exercise, the diastolic pressure, therefore, not changing to any great extent. This is true with a normal circulatory apparatus, but in a defective cardio-vascular system, particularly a weak heart, the systolic and diastolic pressures, even when raised, tend to approximate. The pulse pressure is here, then, the most important observation to be made, and much may be determined about and for young people doing athletics by its study in the individual case. If the pulse pressure is proportionately greater after exercise, it is an indication of a healthy musculature, capable of maintaining itself under sustained strain, but if, on the other hand, the pulse pressure is relatively diminished, violent exercise might give rise to permanent dilatation. These facts hold good for ordinarily severe exercises, but exhausting exercises, even violent exercises of only a few seconds duration, as running a hundred-yard dash, tend on the other hand to cause a marked fall in blood pressure.

But we are most concerned tonight with those conditions which cause a rise in blood pressure. When we make an estimation and find the systolic pressure 160, 180, 200 or even 300, with changes in the diastolic pressure, what does it mean? The first thing for us to remember is that hypertension is a symptom, just as fever or cough or rapid pulse are symptoms, and not to regard it as a disease or condition *sui generis,* and treat it as such, which, I fear, is too often the tendency at the present time. So our first question is, what causes this change? And here the height of the pressure will often direct us in the right channel. In chronic interstitial nephritis the pressure is higher than that usually seen in other diseases, and a continued pressure of 200 or more can nearly always be set down to this cause, whether albumen and casts are at the time present in the urine or not. Repeated urinary examinations will seldom fail to reveal them. Both the systolic and diastolic pressures are raised, but the diastolic does not show so great a proportionate rise, so that the amplitude is usually from 60 to 90, which a marked arterio-sclerosis or a complicating arotic regurgitation may still further accentuate. A lowering of systolic pressure with an increase of diastolic in such a case, in other words, a decreased pulse pressure, should put us on our guard, as giving warning of a decrease in cardiac strength, a failing circulation.

To be sure other conditions, usually those causing increased intracranial tension, as apoplexy, depressed fracture of the skull or fracture of the base, intracranial hemorrhage, Jacksonian epilepsy, or rapidly growing cerebral tumors, give rise to equally high or higher pressures, but here the clinical history directs us in the right road, and the rule holds good that a sustained systolic pressure of 200 or over means interstitial nephritis. Only where one of the conditions just mentioned simulates uremia does serious confusion occur, and here the differential diagnosis must be made by other means.

The blood pressure also serves to differentiate the post epileptic state from uremia, for while the systolic pressure may be very high during or immediately following an epileptic convulsion, it rapidly declines, in contrast to the continued high pressure of uremia.

In some of the cerebral conditions mentioned a moment ago the sphygmomanometer may give us valuable information, the pressure being not at all or very little raised in cerebral thrombosis or embolus, thus distinguishing them from cerebral hemorrhage, and furnishing not only a diagnostic sign, but often also a valuable clue to the proper treatment. In cerebral concussion, too, the pressure is low, in marked contrast to fracture of the skull and the other cerebral conditions named.

The sphygmomanometer is also useful to us in cases of chronic nephritis in determining the pathologic conditions present. We are accustomed to divide these cases into chronic parenchymatous and chronic interstitial nephritis, and we are apt to draw a sharp line of demarkation between these two. But the pathologist does not follow us in this sharp differentiation, and points out that all chronic nephritides have both changes present, the one predominating in one case, the other in another. Here our blood pressure is of value. The cases most nearly approaching a pure parenchymatous have but little increase in blood pressure, and it is safe to say, other factors being eliminated, that the greater the increase the greater the interstitial change.

In patients presenting a somewhat lower tension, having a systolic pressure of about 160 to 200 or so, and in which cardiac and renal diseases can be eliminated, we should think of arterio-sclerosis. Arterio-sclerosis cannot be thus diagnosed, for only about 50%, perhaps, of patients suffering from this affection show increased pressure, pure arterio-sclerosis usually having no associated hypertension. It may be laid down as a rule that only those cases with changes in the visceral arteries, particularly those of the splanchnic area or the thoracic aorta, are accompanied by hypertension. Both the systolic and diastolic pressures are increased, but the diastolic proportionately less than the systolic, so that the pulse pressure is usually from 40 to 60, as against 30 to 40 in health.

In cases presenting an enormous difference between systolic and diastolic pressures, an amplitude of 80, 90, 100 or more, we at once think of aortic insufficiency, a disease which, for obvious reasons, is accompanied by a high systolic and low diastolic reading, from 30 to 40 being a not common reading for the latter, but the sphygmomanometer is not so very useful in aiding in the diagnosis of cardiac lesions. Compensated lesions show, usually, normal readings, while in broken compensation the pressure is high, due to associated asphyxia. It is, however, of inestimable advantage in showing how heavy a load the heart must overcome in such cases, and for exactly the same reason is most valuable in myocarditis, and cardiac hypertrophy from any cause.

There are many other causes of increased blood pressure, among which gout, the hypertrophied heart often accompanying hyperthyroidism and angina pectoris, the latter sometimes, but not always, accompanied by increased arterial tension, must be borne in mind. The gastric crises of tabes dorsalis and lead colic, are accompanied by a pressure between 170 and 200 m.m. which helps to differentiate them from abdominal pain caused by cholelithiasis, appendicitis or gastric ulcer which usually have no rise, or only a very slight one.

The toxemia of the latter half of pregnancy is also accompanied by a rising pressure, often preceding any albuminuria, and its persistence and increase in spite of treatment of the condition may serve as a danger signal. Several investigators have found that the average pressure in the non-pregnant woman is 112, which becomes about 118 by pregnancy, and gradually increases in the latter months of pregnancy to 124 or so. In such cases a pressure of 125 to 150 is said to require careful watching and moderate eliminative treatment, which at 150 or thereabouts demands very active treatment, as 160 is looked on by not a few authors as the danger line, usually requiring the induction of premature labor.

The administration of certain drugs also tends to raise pressure. Of these adrenalin is the most active, but strychnia is the most satisfactory for sustained action. Caffeine also has this action, as has also cocaine in small doses. Ergot produces some elevation by its vasoconstricting effect. Digitalis has long been believed to be an elevator of arterial tension, and while it seems to do so if given hypodermically, there is no good evidence to show that in its therapeutic administration it has any such action if given by mouth. Indeed, when administered to heart cases with broken compensation, it may actually lower a higher tension already existing, through its action in relieving capillary and venous stasis.

Some patients seem to run a high and irregular but persistent blood pressure for a considerable time, in whom there are no urinary changes and no apparent arterial changes, which cases seem to be caused solely by a neurasthenic condition. There are also many cases of hypertension occurring in highly strung, nervous individuals which might be called functional, attended by a high but not unduly high systolic pressure only, the diastolic being relatively low. These patients present no signs of vascular, cardiac or renal diseases, and are often those who are constantly worrying about their blood pressure. They are not infrequently subjected to strict diet with a vigorous course of the iodides and nitrites, all of which tends to make them feel worse, when all that is needed is for them to follow their regular life, with reassurances upon the part of the physician, and, perhaps, a course of bromides.

In this connection it should be mentioned that a rather simple method has been highly recommended by some writers for distinguishing functional from organic hypertonus. This consists simply in measuring the blood pressure of the patient at the time of examination, and, if found to be high, to make a second estimation in the morning before the patient has left his bed, and while he is still fasting, in this way avoiding as far as possible all psychic and functional factors. If one finds a raise of blood pressure at this morning reading, he can be absolutely sure that its increase over normal is due to some organic cause, and by noting the difference between such morning readings and the usual readings in the case, one obtains valuable information not only of diagnostic but also of prognostic value, for if not corrected by appropriate treatment, these temporary hypertensions, when of longer existence and frequent occurrence, may and frequently do give rise to arterial changes.

But after we have studied our case thoroughly, and have found no nephritis, no marked arterio-sclerosis, no cerebral lesions, no organic heart lesion, or increase in the size of the heart, and no one of the other enumerated causes of hypertension, there still remain not a few patients, usually men about middle life, who present a tension of from 145 to about 180 or 185 to whom I would particularly call your attention. What is the etiology, the symptoms, the treatment of this condition? Here we must bear in mind that hypertension is a symptom and not a symptom complex; an expression of a condition, and not a disease. Occurring more often in men than in women, commonly in the middle period of life, in brain workers rather than brawn workers, in those

who carry a heavy load and whose hours of mental strain are prolonged, as the successful business man or the busy physician, often in those who have loved not wisely but too well, their food intake exceeding the requirements of their body, with perhaps tobacco and alcohol added and a sufficient amount of physical exercise left out, with no evidence of heart or kidney lesion even on repeated examination, while the increased blood pressure remains constant and proves to be no temporary increase from emotional causes or that occurring in the higher nervous patients I mentioned a moment ago. Often, yes, usually discovered accidentally in routine examination or a life insurance examination, these cases, I say, should attract our closest attention, for it is in this so-called pre-sclerosis, or angio-sclerosis, or essential arterial hypertension, these cases in which we have spasm of the vessel wall and not true anatomical changes, these pre-nephritis cases, that we hope to accomplish results. Osler, in one of the earlier editions of his text book, said that "Chronic Bright's disease is an incurable affection, and the anatomical conditions on which it depends are quite as beyond the reach of medicine as wrinkled skin or gray hair," and in the same article he has said "After forty in men of this class nothing is more salutary than to experience the shock brought by the knowledge of the presence of albumen and tube casts in the urine. The associated cardiovascular changes are of varying degrees of intensity, and upon them, not upon the renal conditions, does the outlook depend." But at the present with our improved methods for the study of these conditions we are often enabled to discover these cases at an earlier day, when much can be done to ward off late changes and perhaps effect a cure. The cause of the high tension in these cases is usually ascribed to the presence in the circulating blood of toxins, either chemical or bacterial, absorbed in the intestines, these acting upon either the vaso-motor centers in the medulla oblongata or stimulating the muscular coat of the vessels direct; another hypothesis is that the toxins stimulate the adrenals to overaction and thus give rise to the spasm. Be that as it may, all observers seem to agree that faulty metabolism is the source of the trouble. As Faught puts it, "A permanent increase in blood pressure in a young adult or in one in early middle life, in the absence of discoverable organic change in the heart, blood vessels or kidneys, is always a sign of a chronic toxemia, a poisoning arising from some error in metabolism or deficiency of elimination, either intestinal or urinary or both."

As you would expect, these cases do not present any very definite symptomatology, but are more often discovered by chance in the course of a routine examination, in cases in which we are at a loss for a definite diagnosis. Such patients usually complain of a loss of energy, a distaste for work, of tiring too easily, of inability to concentrate for mental effort. Many come complaining of indigestion and bloating after meals, or of shortness of breath on exertion, usually ascribed to gaseous distension; or the patient may present indefinite nervous symptoms; slight vertigo with disturbed sleep, and possibly coldness of the extremities with numbness or tingling. To the heightened blood pressure is added, perhaps, a bare suggestion of thickening when the arteries are palpated, and a questionable accentuation of the second aortic sound. It is well to pay attention to these early symptoms, for at this time we are dealing with a spasm only of the arterial wall, causing narrowing of its lumen, and a possible muscular hypertrophy of its coats, conditions in which we can do much by appropriate treatment, obtaining results not possible after extensive fibrosis and sclerosis have taken place with accompanying heart and kidney changes.

Syphilis, one of the most common causes of early arterio-sclerosis, should be ruled out in questionable cases, as can usually be easily done by Wassermann reaction.

In the treatment of chronic hypertension, we should ever bear in mind that in cardio-vascular-renal diseases it is a compensatory condition, designed to maintain the circulatory equilibrium of the various organs, that its considerable reduction is often attended by edema and signs of cardiac deficiency, and that our efforts, far from attempting to reduce it, must often be directed to maintaining it.

Only to that portion of its rise which is functional, brought about by toxemic conditions, causing a spastic contraction of the vessels, should our therapeutic efforts be directed. In the early cases accompanied by spastic conditions only, with scarcely any other symptoms except that of hypertension, this often means cure, and in those already accompanied by organic changes the slight lessening of pressure often amounting to only 10 or 15 m.m. which is accomplished by appropriate treatment often gives relief to many distressing symptoms, not to speak of that still greater benefit secured by the prevention or retardation of further changes, thus limiting the onward march of the disease. Energetic treatment must, of course, be instituted in those cases where the continued high pressure is directly and immediately inimical to life, as in the enormous pressure which usually accompanies uremia, or in threatened apoplexy, or in the rising pressure of the late toxemias of pregnancy.

And of what does treatment in these early cases consist? Of drugs? Yes! But of drugs last and not first. Our greatest efforts must be directed toward a limitation of those conditions which give rise to the condition, to a lessening of the strain upon the cardio-vascular system, to a lessening of the ingestion of food and drink which might increase the strain, to a lessening of the intestinal stasis and fermentative processes which may have much to do with its cause, and to an increased elimination of the waste products of our bodies by bowels, kidneys, skin and lungs. Then, and only then, may drugs which directly influence pressure become useful.

And so our first thought is directed to the patient's mode of life. A letting down of the tension by lessening hurry and worry and work, a quieter, slower existence, involving less mental strain and anxiety, with more vacation, will often work wonders. To this should be added often a limitation of the patient's social activity, avoiding especially evening functions, for early to bed and late to rise should be the rule in this condition.

In those who are nervous and irritable, sleeping poorly and troubled with dreams and early waking, the occasional use of a few doses of bromide, preferably sodium bromide, or a small dose of one of the hypnotics, as veronal or medinol, may be useful to induce improved sleep, which is to be secured by all means, for blood pressure is normally lowest in the morning, a refreshing night's sleep often causing a drop of 20 or 25 m.m. In this connection it should be mentioned that sleep procured artificially does not seem to have so beneficial an effect as natural sleep.

In more advanced cases with renal diseases and a pressure exceeding 200 a rest in bed of two to three weeks will often cause the pressure to assume a new level 10 to 20 m.m. below its previous level, with relief of many of the unpleasant symptoms previously complained of.

Usually, however, in early cases, it is not only more rest from business or professional cares, but more physical exercise which is needed, thus increasing the metabolism of the body and driving off waste products. This should not be spasmodic or violent, or too long continued at first, but should be gentle and regular. It may take the form of gymnasium work, or walking or riding, or golf or any other healthful but not too vigorous outdoor exercise, according to the tastes and purse of the patient. The relaxation, both mental and physical, together with the improved digestion and elimination secured by this means are often of great benefit.

Of not less importance than rest and exercise is the question of assimilation and elimination of food and waste. And here also a middle course should be adopted. The statement has been made so often that we as a nation eat too much—undoubtedly true—that many fads and fancies have arisen, many of them illogical and irrational. We must ever bear in mind that whatever the diet advised, it must always contain the caloric equivalent of the patient's needs—enough food value to maintain bodily health and vigor. On the other hand, overindulgence should be strictly avoided. The nitrogenous foods, more particularly the meats, are to be much restricted and should not be taken oftener than once daily, thus lessening the putrefactive changes in the intestines, and the production of purin compounds which produce autointoxication. The diet should therefore be largely vegetable and farinaceous, with milk, eggs and fruit, the protein intake being greatly restricted. Slow eating and thorough mastication should be insisted upon. The fluid intake should be somewhat limited, as the absorption of excessive amounts of fluid throws added work upon the cardiovascular system. Its limitation not only avoids this strain, but also tends to eventually lessen the total amount of fluid in the body, and thus reduce the pressure in the vessels. The restriction should not, however, fall below a daily fluid intake of 1500 c.c. from all sources, and even a limitation to this amount should not be too long continued.

Alcohol, tobacco, tea and coffee are usually interdicted. This should certainly hold good of the first, except in the case of steady drinkers, when sudden total abstinence may occasionally cause great discomfort. These cases must certainly be rare, and "no alcoholics" is virtually always the best order. In regard to the last three, however, perhaps so great restriction is not always necessary. While nicotine has a most energetic pressor action, it still remains true that the blood pressure of habitual smokers is not elevated thereby, and so one may content one's self, perhaps, with restricting the use of tobacco to two or three cigars daily, laying great emphasis, however, on this restriction. As for a morning cup of tea or coffee, it must not be forgotten that while the caffein they contain raises blood pressure, it also stimulates the psychic centers and gives a sense of well being, and not infrequently the permission of a morning cup (but one only), adds greatly to the comfort of a patient suffering from chronic interstitial nephritis without having any apparent effect on his blood pressure.

The excretion next occupies our attention. The bowels must be kept active. Alkaline salines given in the early morning on an empty stomach, with an occasional moderate dose of calomel, seem to answer the question best, and even in those who do not have constipation, the calomel should not be omitted. A once-a-week course seems to be sufficient.

Bedrooms should be well ventilated, and the patient should be out of doors as much as possible, for carbon dioxide circulating in the blood has a most powerful influence in raising arterial tension.

Frequent bathing should be advised, but only the warm bath, preferably in the evening. I have never been able to see that cold bathing of any kind with its blood pressure raising qualities was ever useful in this condition.

Drugs have only a limited field of usefulness. The action of the nitrites is very transitory, the patient rapidly acquiring a tolerance for their use, and with our present belief that at least the greater part of arterial hypertension is compensatory, and our knowledge that these agents have no permanent effect on increased tension, their use is being more and more restricted to those cases which require sudden lowering of blood pressure, as anginal attacks, cerebral hemorrhage or uremic convulsions, or for the relief of the sensory symptoms, such as headache, angenoid pain, or nocturnal dyspnea, which they often fully relieve, frequently without any reduction whatever of the blood pressure.

Venesection, now so little used, must not be for-

gotten, for it is one of the very best and most efficient means of lowering blood pressure in uremia and allied states; from 16 to 24 ozs. of blood being abstracted, often with the greatest good to the patient.

Iodide of potassium in small doses is a time-honored remedy, but there is no sufficient evidence to show that it is of any especial benefit, except in cases where syphilis plays a role, in which case the iodides are indispensable. Still they do relieve headache and precordial pain, their exact action in accomplishing this not being understood. As they must be given over long periods of time to effect beneficial results, it is always wise to alternate the potassium salt with the less irritating ones of sodium or strontium.

If, as these cases advance, any evidence of failing circulation supervenes, digitalis should be used in exactly the same manner as in a decompensated heart. It should be remembered that digitalis, given by mouth, does not raise blood pressure in such cases, and by relieving cyanosis may actually lower it. When the time comes, however, in which we feel called upon to administer digitalis, our case has passed beyond the realm of this discussion, for we are no longer dealing with arterial hypertension.

A CASE OF ANTHRAX.

By J. C. FALLON, M. D., Reno, Nevada.

In presenting this case I am prompted by the many inquiries I have received from different parts of the State. The inquiries were in turn prompted by the prominence of the patient and the rarity of this disease in the human in this State.

I have incorporated in the report some statistics as to prognosis and treatment which were kindly collected for me by Dr. M. F. Boyd of the University of Nevada, from special literature on the subject to which he has access.

This case was a man forty years of age, with an excellent previous history, and apparently a perfect specimen of physical manhood. He, however, had a mitral regurgitation which was quite pronounced, and which was transmitted to the axilla on the left side. Heart was considerably enlarged downward, and to the left. He did not and never had used alcoholic drinks, but smoked a pipe quite a little. He was a veterinary surgeon, but had been following ranching for several years previous to his death, only two weeks before which time he was appointed state quarantine officer for Churchill county by proclamation of the governor, to investigate the cause of the great mortality among cattle in all sections of that valley.

About noon on August 25, 1914, the patient presented himself to me for diagnosis and treatment. There was an infected wound at the base of the thumb on the left hand, which the patient attributed to the bite of a mosquito while he was irrigating in his field two days previous, and which he said he had "scratched until it bled."

This spot was about the size of a pea, and was black, which color patient attributed to the fact that he had "burned it out with pure carbolic acid." On pressure it exuded a dark serum-like substance. The surrounding area was somewhat hyperemic, the hand was much distorted from the edema, and this edema was peculiar in that it was most severe at points distant from the lesion, i. e., the fingers and palmar surface of the hand. In fact, the swelling caused so much distortion as to make it appear as if the fingers were suffering from a backward dislocation, the hand proper being depressed in comparison. There was no pain. Patient did not feel badly, and was prompted to consult me by the fact that on the 9th of August, some 16 days previous, he had opened the carcass of an animal which had died from an unknown cause, excised a piece of the liver, and sent it to the university for diagnosis, the diagnosis in this case being anthrax. This autopsy was performed without gloves, but patient claimed he had thoroughly disinfected not only his hands, but all the instruments, and clothing he had used or worn on that occasion. Such sterilization of instruments and clothing being accomplished by boiling. He admitted, however, that the overalls he was wearing at the time he thought he was bitten were the same he wore at the autopsy. As that was two weeks previous, and as patient said he had not been in contact with diseased animals since that time, it seemed unreasonable to suspect an incubation period of such length.

At this time pulse was 90, temperature 101.2°, and respiration normal. I cautioned him that it was extremely suspicious, and that while it seemed a rather late infection, it certainly resembled in many particulars malignant pustule. As he was a veterinary and realized the danger from this infection, I had every reason to believe he had as he said, thoroughly opened and cauterized the wound. I advised him to return home at once, and keep his hand bathed constantly in hot creolin solution to promote active drainage, and to notify me at once of any unfavorable change in his condition. He said he did not worry about the hand, but he promised to go home, which, however, he did not do, for I saw him in town as late as 6 o'clock that evening.

The next morning I was summoned to his house, and found no difficulty in making a clinical diagnosis of anthrax. The hand was swollen (uniformly) to the wrist, and the entire dorsal surface was black and tense, with a hyperemic line of demarcation at the wrist, and secondary vesicles surrounding the original lesion and distant from it.

I immediately anesthetized the patient, and excised an area as large as a 50-cent piece, and again thoroughly cauterized with pure carbolic acid. I was convinced at the time, however, that the prognosis was exceedingly grave, and so informed the patient's family.

The temperature at this time was 102.5°, pulse 98, respiration 28. Patient was complaining of extreme pain at the base of the thumb on the palmar surface, which seemed to be due to the tension caused by the extreme edema. He still had a good appetite, had no nausea or vomiting, no headache, was cheerful and not in the least prostrated. At 4 o'clock that afternoon (4th day from time he first noticed hand was sore) his condition was unchanged except for the edema, which was more pronounced, and the pain due to the tension was now so severe that morphine was necessary to alleviate his suffering. Realizing the seriousness of the case I asked for consultation. My consultant, however, assured the patient and his wife that it was merely a bad case of "blood poisoning" and that he was, and would be "all right." Fortunately I had sent two smears to the university for diagnosis. Consultant, however, agreed with treatment, which beside the surgical procedure, consisted of hot fomentations almost continuously, nutritious food, small doses of quinine frequently repeated, and morphine as needed to control pain.

The next morning found quite an extension of the edema, hyperemia, and vesicles. Patient had spent a restless night, had slight nausea, no appe-

tite, some headache, and much pain at base of thumb. Bowels were obstinate and required energetic measures to move them. Temperature was 103.4°, pulse 98, respiration 30. Patient apparently was strong, and when free from pain was cheerful, and not at all worried concerning his condition. In fact another of my colleagues whom I had invited to see the case with me this morning, could see nothing alarming in patient's condition, and so informed patient's wife, seeming to agree with my consultant of the day before, that it was not anthrax.

That afternoon temperature was 104.2°, pulse 102, respiration 34. It was now necessary to keep patient under morphine constantly, as the pain was unbearable. The edema and hyperemia had reached nearly to the elbow, and the entire area was covered with vesicles, amounting to blebs in some instances, and one in the axilla was the size of a small hand. These were opened frequently, but almost immediately reformed. The hand to the wrist was greatly distorted, and intensely black.

On the morning of the next and last day, which was the sixth day from the time patient first had his attention called to the hand by the supposed bite, while the temperature was only 102°, pulse 98, respiration 36, patient presented evidence of severe toxemia, was extremely restless, slightly delirious, was sweating profusely, and pulse was full and bounding. At this time the line of demarcation had reached the elbow, while swelling was quite pronounced over entire left side to below nipple line. It was on this day that the report came from the university that the smear contained anthrax bacilli, with the suggestion that serum be obtained if possible, which had been thought of before, but our local druggist was of the opinion that it was in stock only in the east, and before we discovered our mistake and had obtained it it was too late to use it. I doubt, however, if it could have been obtained early enough after I first saw the case, as there was none in this locality.

That afternoon at 4 o'clock the pain had become so intense that opiates failed to give relief, and patient and his wife both begged me to relieve the tension, which I did with three superficial incisions on the dorsal surface, enlarging the openings thus made with hemostats. The wounds bled freely, the blood being nearly as black as ink, and was with some difficulty controlled, it being finally necessary to bandage hand tightly to control oozing, as the blood would not coagulate. This bleeding seemed to relieve the patient considerably, and in about an hour he sank into a peaceful sleep, from which he never fully aroused, his pulse gradually getting weaker until, for about two hours previous to death, it was not perceptible, and at about which time the temperature per rectum registered 105.4°. Death occurred at 8 o'clock, and came without a struggle of any kind, and so quietly that those present were not aware for some time that the end had come.

In summarizing: The first question that arises in most of our minds is the source of infection. It seems incredible that the incubation period could have been 16 days, as all authorities agree that it is between 36 hours and three days. However, I learned later that the patient had been superintending the burning of carcasses of animals that had died of anthrax just a few days prior to the time of his "mosquito bite." It is not at all improbable that he became infected at that time. Another method of infection could have been from the overalls he was wearing, and which were the same he had worn at the autopsy, as it is well known that the spores withstand boiling for an incredible length of time. The next, and what seems to me the most probable mode of infection, was through improperly cleansed finger nails, the dried blood containing spores remaining beneath them, and as the nails grew, being brought nearer the surface, and when he "scratched his hand until it bled" some of these spores gained access to the wound. The exact method of infection in this case, of course, never will be known, and proves the necessity of extreme caution, when even in a remote way, we are brought in contact with anthrax.

A few words as to diagnosis. Not every one has access to a microscope, and while we are waiting for a return from the laboratory much valuable time is lost. First in importance comes history of possible exposure, and as seen from this case, it is not necessary that it should have been within the incubation period as outlined in our textbooks, which by the way, devote very little space to this rare disease.

To me the most important local symptoms (as told me by patient and as observed) were:

1. The small, red papule (pimple, as the laity call it), to which attention is first called by a stinging, smarting sensation, and not a sensation of pain or soreness, as in ordinary infections.

2. The breaking down of this papule within a very few hours, with the formation of a vesicle (or little water blister, as this patient described it), which upon being opened, discharges a bloody serum—no pus being present. This absence of pus is an extremely valuable aid if the case is seen later, as with the intense reaction one is surprised at the absence of pus, for the first thought on seeing the case will be that there is pus under pressure, and we also wonder at the absence of early pain.

3. The black center in an area of brawny induration and extreme edema, the distortion being out of all proportion to the apparent severity of the infection; and

5. The secondary vesicles, which act so characteristically as to enable one to make the diagnosis almost to a certainty when the above symptoms are not so typical. These vesicles occur in successive crops, becoming larger with each crop, and appear at points distant from the lesion as well as surrounding it.

In this case the local symptoms appeared in rapid succession, and before the constitutional symptoms were at all alarming. But for the fact that the constitutional symptoms in this case were not so early in appearing in their severest form, it presented almost a book picture of a typical

case, and yet two competent physicians did not agree with the diagnosis, which is not cited to bring out any superior diagnostic ability on my part, but to show how careful one must be when dealing with any infection in a district where anthrax is known to have existed.

As to the prognosis and treatment we will now quote from the statistics kindly collected for us by Dr. Boyd.

Treatment: Dr. T. M. Legge. *The Lancet*, 1905.

Mortality generally 25%. In early cases as soon as local center of infection has been removed or destroyed there is a rapid fall in temperature, the edema disappears, and menace to life is over, though several days may elapse before glandular swelling disappears. Fatal cases are those in which excision is practiced late, and in which symptoms are severe.

Ipecac has been used locally in 50 cases without fatal result. Injection of carbolic acid around pustule in 50 cases with 2% of deaths. Another series of 384 cases were treated thus with 20 deaths (5%). Length of stay in hospital of cases of recovery where excision is practiced is from 15 to 20 days.

Up to 1905, 67 cases treated with Sclaro's serum had been reported, 56 treated with serum alone, and in 11 serum was subsequent to excision or cauterization or both. One case in each of these two groups was fatal, infection being on the face. In cases with recovery average duration of treatment was 8 days; greatest was 14 days.

Sclaro in 1903 tabulated all cases known to have been treated with serum in Italy, no matter in what stage of the disease. These totaled 164, with 10 deaths (6%), while during the same period in all the cases occurring in Italy the percentage was 24.1%.

Here are some of the claims for the serum treatment:

1. Innocuous in large doses.
2. Well borne even in intravenous injections.
3. No case in early stage or of moderate severity is fatal if treated with serum.
4. When injected into the veins the serum quickly arrests the extension of the edematous process.
5. Used early it reduces to a minimum the destruction of tissue at site of pustule.
6. In some locations, as eyelid, can be used in preference to any other treatment.
7. In internal anthrax it is the only treatment holding out any hope of benefit.

Injection of serum is followed by a rise of temperature often to over 105°, and with it an improvement in the general condition of patient.

Sclaro produces this serum by immunization of horses, first using attenuated, and later virulent anthrax bacilli. Dosage of serum is graduated, the initial dose usually being 40 c.c., but even larger initial doses are advocated.

The following statistics were taken from the reports of Anthrax Investigation Board, Bradford District, England (Dr. Enrich):

During 1910-11, 18 cases are reported, in 17 of which the anthrax bacilli were cultivated. Fourteen were external, with one death and 13 recoveries; 4 were internal and all 4 died. Serum was used in 7 cases, with recovery, the doses totaling from 80 to 190 c.c.

During 1911-12, 19 cases were treated, in 18 of which the bacilli was demonstrated. Of these 14 were external, with 3 deaths and 11 recoveries, and 5 were internal, with 5 deaths. Serum was used in three cases with recovery. Doses totaled from 80 to 180 c.c.

From the above statistics two points stand out prominently, viz.: the low mortality and the great claims made for the serum treatment. As regards the mortality, it must be remembered that these tables were taken in a country and locality where anthrax is prevalent at all times and is as common as typhoid is with us, and the mortality does not seem to be much greater according to some observers. As to the serum treatment it will be noticed by a study of these statistics that the mortality is about the same in all classes of cases under any of the treatments mentioned above. For instance, in one series of cases ipecac alone was used locally in 50 cases without one death. Again we find 384 cases treated by injection of carbolic acid around pustule with only 20 deaths, or about 5%, in contrast to a series of 67 cases treated with serum alone, or in conjunction with excision, etc., with two deaths. Again we find all the cases in Italy for a given period tabulated as receiving the serum treatment, with a mortality of 6%. In this country reliance is placed mainly upon excision and cauterization, the serum not being considered as efficacious as our foreign friends deem it, although it is my belief it should be used in every case, and our local druggists should be required to keep a fresh stock on hand all the time.

In conclusion, it would be rather difficult to select any one method of treatment from the cases quoted. In the case under discussion I am convinced that the bacilli had entered the blood stream before I saw it, and that all treatment would have failed. I think the damage in this case was done by insufficient cauterization following an incomplete excision. I am convinced that one will not inflict the necessary pain upon one's self that would be necessary for a thorough excision and cauterization, and that unless it is done most thoroughly it is better to let it entirely alone, and thus avoid opening avenues of entrance into the blood stream. Should I be called upon again to treat a case I would anesthetize the patient and use the actual cautery alone locally, and I would carry it deeply into sound tissue, and for a large area surrounding the lesion, should it, of course, be in a location where such treatment could be carried out. I would follow this with large doses of serum, and repeat frequently until patient's condition showed marked improvement.

If I could not practice cauterization I believe I would prefer to use ipecac and serum rather than to take chances with excision.

THE PERVERSION OF FORCES IN AND ABOUT THE ORAL CAVITY.*

By DR. B. FRANK GRAY, Colorado Springs.

I come to you as an Orthodontist to talk on a subject about which some of you know nothing. A good many of you know something of it, while a few of you know a great deal about it.

As you go up and down the streets of Los Angeles, you will observe multitudes of children with inharmonious features, distorted faces, poor physique, anemic and ill-nourished. What you see in our own city is to be seen in every city, town and hamlet in the country.

Among the factors which operate to bring about these undesirable conditions, a tremendous percentage is due to causes in which the physician and the orthodontist are mutually interested. The physician is constantly being called upon to remove adenoids and tonsils, to treat deflected nasal septa and all the pathological conditions of the nasal tract. How many physicians realize the great importance of the teeth in just such cases? You can no more hope to meet with success in your work if you disregard the vital bearing the teeth have in the matter, than can the orthodontist hope to meet with success if he neglects the matter of the obstructed nose. And while my paper deals principally with those cases of dental irregularity associated with an obstructed respiration, I want to say that maloccluded teeth, arising from whatever cause, is a most serious handicap to the individual.

Certainly science has progressed far enough to make it evident that good health pre-supposes a good digestion and assimilation of food, and this in turn, requires the thorough mastication of food. With irregular, or maloccluded teeth, this is utterly impossible. Insofar as there is a departure from the normal arrangement of the teeth, just that far from a normal standard of efficiency will be the mastication of food. With many people the arrangement of the teeth is such that anything like efficient mastication is wholly out of the question.

Causes of dental irregularity are numerous. Some of the important ones may be stated as: premature loss of the deciduous teeth; loss of the permanent teeth; imperfect dental operations; prolonged retention of the deciduous teeth; supernumerary teeth; disuse; abnormal habits of lip and tongue and thumb-sucking; nasal obstructions, etc. (Angle.)

The skilled orthodontist can bring about correction of the irregularly arranged teeth, no matter what cause has operated to produce the condition. But the conscientious operator is much concerned about the permanence of his operation, and there is one type of malocclusion which perplexes us more in the aggregate than all others combined. It will be chiefly considered in this paper.

Now I wish to call your attention to the normal occlusion of the teeth. (Fig. 1.) All dentists and medical men should know this arrangement.

Has not Nature provided wisely in this beautiful dental apparatus? Note the simplicity of it all, and yet see how all the surfaces of each tooth are brought into play in mastication!

SOME FORCES GOVERNING THE OCCLUSION OF THE TEETH.

We have in the beautiful and efficient system of the interlocking of the cusps of the teeth, alone,

Fig. 1. An example of occlusion which approximates the normal.

a great factor looking to the permanent maintenance of the normal,—provided normality exists in a given case. Certainly it is true that one of the best guaranties of maintaining order and harmony in this branch of medicine, as in other branches, is that we shall first have a condition of harmony established. But there are other factors,—other forces if you please, which have to do with the occlusion of the teeth, with the health of the individual, with the symmetry and beauty of the face. Given as an example, an individual possessing beautiful teeth, normally arranged as indicated, their integrity of arrangement does not remain so simply because of the perfect interlocking of cusp with cusp. These wonderful dental organs, which mean so much to their possessor, are, in reality, being actually balanced and held in their proper relations by muscular forces. The buccinator and the orbicularis oris muscles normally maintain a constant pressure from without upon the teeth, and upon the maxillary bones which carry the teeth. This force, while not so great, as measured in degrees of stress, because of its constancy becomes a factor of tremendous importance.

I have considered the harmonious way in which the teeth of the upper and lower arch are related,

* Read before a joint meeting of the Los Angeles County Medical Society and the Los Angeles County Dental Society, 1912.

how they interlock with such efficiency and beauty. Then, too, I have considered the muscular forces operating *from without* upon the dental arches. But if that were all, we might reasonably expect the arches would become narrowed from this anterior pressure. However, there is a strong muscular pressure from *within*. The tongue, when normally at rest, completely fills the oral cavity, causing constant and equal pressure from within upon the teeth of both the upper and lower jaw. Like the exterior pressure, this interior pressure, because of its constancy, becomes a great factor in maintaining the integrity of the normal dental mechanism.

I have touched briefly upon what may be expected under *normal* conditions.

The question which I wish to bring to the attention of the medical profession with as much

Fig. 2. Typical Mouth-breather Class II, Division I Malocclusion. "Adenoids" removed and Malocclusion corrected.

force as possible, is, *The Perversion of the Normal Forces* governing the harmony and balance of this same dental apparatus, and in order to do so, I will consider tissues quite within the realm of the physician and rhinologist.

No single class of malocclusion of the teeth causes greater facial deformity than that known as "Class II, Division I," of the Angle Classification. Out of one thousand cases of dental irregularity Dr. Angle has found approximately ninety cases corresponding to this classification. Here we have, as the chief causative factor, mouth-breathing. Figures 2, 3 and 4 illustrate a rather extreme case of this type.

Mouth-breathing arises from occlusion of the nasal passage, whether the cause be hypertrophy of the lymphoid tissue in the dome of the pharynx (so-called adenoids), deflection of the nasal septum, or pathological conditions of the lining membrane of the nose. If the cause be hypertrophied lymphoid tissue, the posterior nares may be partially or wholly occluded. If other causes are operative, mouth-breathing is likely to correspond, in degree, to the extent of the obstruction present. The child is thus forced to breathe through the mouth a part or all the time. If the obstruction is only partial, he may keep the lips closed during the day time, while at night he is apt to sleep habitually with the mouth open, breathing through that channel instead of through the nose as Nature intended.

Having in mind my explanation of the muscular forces which are constantly operative to maintain the normal balance and occlusion of the teeth, I feel sure you will quickly appreciate how mouth-breathing starts a perversion of this muscular force. No longer does the upper lip bring its normal pressure to bear upon the anterior teeth (incisors and cuspids) of the *upper dental* arch. These teeth protrude, in many instances, and to such an extent that the lip may only be drawn over them with great effort. On either side of the mouth there is a peculiar pull downward, of the muscles. This retards the lateral development of the arch, and presently it is abnormally narrow. With the air current passing over the tongue, that organ lies at the bottom of the oral cavity, so that its muscular influence is not exerted normally against the teeth of the upper arch, and probably *abnormally* against the teeth of the lower arch, while the lack of use of the nose in the act of respiration, results in a lack of development of that organ, especially downward.

Such are some of the causes which account for the so-called V-shaped, or high arch. The open mouth, and the peculiar pull of the muscles, causes the molar teeth of the lower arch to occlude with the upper teeth in a relation distal to normal. The characteristic weak and undeveloped chin follows. Development of the face, including the nose, the teeth, etc., normally proceeds downward and forward, as has been so well shown by Dr. Frederick B. Noyes, the prominent orthodontist and histologist.

What facial deformity is worse than that arising in the way I have outlined? Certainly none, unless it be that of such a congenital condition as hare-lip, or some post-natal loss of the tissues of the face, resulting from accident or disease.

How far-reaching must be the deformity resulting from malocclusion, in its influence upon the life of the individual thus afflicted! Think of the mortification the sensitive child suffers as he is taunted by his playmates, and as he grows older he appreciates more and more the handicap under which he labors. Indeed, it may mean the changing of the whole current of his life. Aside from the deformity itself, he is constantly breathing through the mouth, and the inspired air does not receive its proper straining, warming and moistening, as would be true if normal breathing was the rule. Herein may lie the cause of serious impairment of the health, the physicians tell us: liability to infection, etc. The efficiency of the masticating apparatus is greatly impaired, and thus the nutrition of the body suffers.

I should interject here the important fact, that while mouth-breathing is the cause of dental irregularity, *malocclusion of the teeth is a pronounced factor in causing mouth-breathing to persist.* With the lips held forcibly apart by the mal-arranged teeth, *mouth-breathing will continue even though a free nasal passage exists.* Here orthodontic services are of vital importance. In some cases the adenoids or other nasal obstructions may cease to operate as the cause of abnormal respiration, but the malocclusion which has followed in the wake of the nasal obstruction, has become the *chief* factor in the abnormal respiration. Writers of medical books, even of recent publication, ignore the necessity of correcting the occlusion of the teeth as a remedial measure in such cases. I have in mind such an omission in a rather recent work by Doctor Osler.

But even though the orthodontist render efficient services (and here is one of the most vital things of my paper) unless the physician or rhinologist

Fig. 3.

masters his part of the work, our painstaking work, covering many months, and even years of time (including the moving of the teeth and their proper retention), may largely go for naught. We are all liable to error, and sometimes inefficiency, but the instances continue to multiply wherein the physician pronounces our patient free of nasal obstruction, *and yet he is a persistent mouth-breather!* Again, children are operated upon for adenoids and possibly tonsils: their nasal passages are declared to be free. They continue to breathe through the mouth in spite of all that is done for them. The orthodontist advises the parent as to suitable means of forcibly holding the mouth closed at night. Sometimes this seems to be effective, oftener not. We are driven to several conclusions: that frequently the obstruction is *not* thoroughly removed (and we can see the difficulties of the technic of the work, too!). So, if we dare, we would be charitable, but there is so much at stake that we can scarcely be so. Then we feel so sure of the skill of some operators in this field of work,—so sure of their thoroughness,—that we are satisfied that the enlargement of the lymphoid tissue goes on again after the initial operation, however contrary this may be to the teaching of the medical profession on this subject. Again, we must believe the *force of the mouth-breathing habit alone,* is tremendous, in some instances: that after all proper surgical measures have been resorted to, the habit persists. In this latter we need the conscientious co-operation of the medical profession. If mouth-breathing be purely a habit it is a serious enough one, and *we need to cure the habit.* Just how shall we do so? But the other points I have touched upon are even more vital, I think. We want you gentlemen of the medical profession to be more keenly alive to the situation than ever before.

We are prepared and competent to restore the normal balance and harmony of the dental arches, and of the face of the patient, and we want you to know that this work also promotes the normal development of the nose. But we are looking ahead to the future, to the permanence of our work. Unless you help us, good and strong, we shall feel, as I admit we have in the past, that our progress is being hindered because of the pathological nasal or post-nasal conditions which persist in

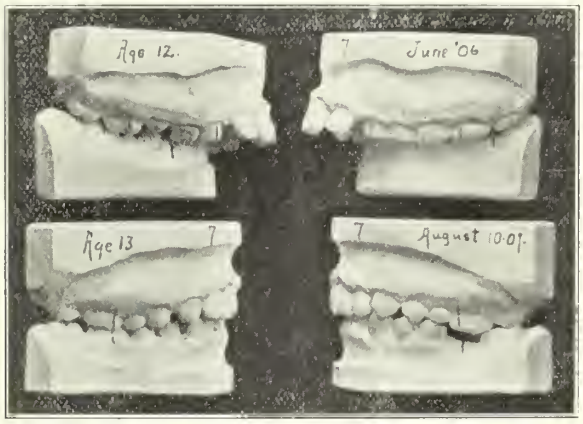

Fig. 4. Models showing Malocclusion of teeth of patient whose photographs appear above. Models of corrected case also shown.

spite of all ordinary treatment by the physician.

May not some of our hygienists be near the truth, when they hold that hypertrophy of the lymphoid tissue in the pharynx,—and of the tonsils,—is due to wrong living? Due to bad dietetics and bad hygiene? They contend that the cutting away of the abnormal tissues is but a method of temporizing,—that the growth returns with continued wrong living.

Dr. Osler, after reciting methods of dealing with adenoids, finishes the chapter by saying: "Throughout the entire treatment attention should be paid to hygiene and diet: cod-liver oil and the iodide of iron may be administered with benefit." If this same attention were given to hygiene and diet at the outset, might not these evils be much mitigated?

I have endeavored to show how vitally close is the relation of the work of the physician or rhinologist with that of the orthodontist. There is a chain of cause and effect at work, involving the pharynx, the tonsils, the teeth and the nose, and until we appreciate the absolute necessity of active co-operation, failure, instead of success, will be frequently in evidence on both sides.

ENDOCARDITIS WITH STREPTOCOCCEMIA.*

By W. H. STRIETMANN, M. D., Oakland.

Under this title it is my purpose to consider only that group of cases of the so-called class of malignant or infective endocarditis in which the streptococcus is demonstrable in the blood stream and with the particular purpose in view of translating the older conceptions of the etiology of this disease into terms of the recent explanation of its bacteriology and pathology as offered by the brilliant work of E. C. Rosenow of Chicago.

Thus, while it has long been known that malignant, infective endocarditis occurs secondarily to acute rheumatism, pneumonia and septic processes of all kinds, the relationship between the bacteriology of these various conditions as shown by Rosenow offers the underlying reasons for this intimate association. The various biologic phenomena of such individual organisms as streptococcus hemolyticus, and diplococcus pneumonia, the specificity of their immune bodies in particular, and their commonly recognized bacteriologic properties, their cultural differences, etc., have thoroughly distinguished and dissociated them one from the other in the minds of the medical profession. As a result it was easy enough to understand why secondarily to a case of pneumococcus pneumonia or in a primary case of pneumococcus septicemia we might find an infective endocarditis and recover the pneumococcus from the blood stream. It was not easily comprehensible, however, in the event of finding a streptococcus in the blood stream associated with an infective endocarditis secondary to pneumococcus lung infection or acute rheumatism, and we commonly supposed that a superimposed infection was the cause.

By the work of Rosenow we are enabled to understand clearly the reason for this apparent double infection. His work and findings may perhaps be best presented by more or less condensed abstracts from his articles. He finds that "it has been possible to transform typical encapsulated pneumococci into hemolytic streptococci and vice versa. The transformation has been so complete that I have no hesitation in saying that if bacteriologists can differentiate a typical pneumococcus from a typical hemolytic streptococcus, then it is possible to transform one into the other. The pneumococci formed from streptococci have capsules, are indistinguishable from the former in morphology, correspond to all the differential tests known, have a pathogenicity more or less characteristic of pneumococci, producing hemorrhages in lungs and exudative pneumonia of a certain range in virulence, and pneumococcemia when still more virulent; are agglutinated specifically by anti-pneumococcus sera, and give rise to the formation of antibodies specific for pneumococci. Hemolytic streptococci formed from pneumococci behave exactly as do streptococci from the usual sources. During the transition of pneumococci into streptococci, and vice versa, there are intermediate forms which correspond to those strains, of which streptococcus viridans is the most typical example, and to the streptococci from rheumatism. The apparent correct position of various streptococci may best be illustrated by a partially flexed hand in which hemolytic streptococcus occupies the position of the little finger, the pneumococcus the place of the index finger (the opposite extreme), streptococcus viridans (representing the group of more or less saprophytic, nonhemolyzing streptococci) the middle finger, streptococcus 'rheumaticus' the fourth finger, and streptococcus mucosus, partaking some of the properties of both pneumococci and streptococci, the position of the thumb. In this grouping there is in general an increase in parasitism and virulence as we approach the thumb (streptococcus mucosus). The fact that they are members of the same family is illustrated by their being members of the same hand. The sign of reversible chemical reaction $(\leftarrow\!\!-\!\!-\!\!-\!\!\rightarrow)$ between each member might be used to illustrate their transmutability."

It was further shown by growing hemolytic streptococcus in symbiosis with B. subtilis on blood agar plates that it was possible to convert it into streptococcus viridans. Other workers had demonstrated that streptococcus hemolyticus possessed a marked affinity for joints; with the change to the viridans type, however, this affinity was lost and the heart valves became the seat of lesions, endocarditis resulting without arthritis. Rosenow showed this differentiation by injecting mixed cultures of these two organisms and mass cultures from tonsils into experimental animals with the result that the organisms were found isolated according to the specific affinity before mentioned, i. e., the viridans group produced endocardial lesions, the hemolytic streptococcus involved the joints.

Rosenow further showed that the same organism might be transformed into a typical, lanceolate, encapsulated, highly virulent pneumococcus producing now, neither endocarditis nor arthritis, but a rapidly fatal pneumococcemia instead. "Further, by the use of shake cultures in test tubes containing a large amount (approximately 12 c.c.) of ascites-dextrose-agar, thus affording a wide range of oxygen pressure, I have been able to isolate the organisms corresponding closely to those described by Poynton and Paine and others, from joint exudate in fourteen out of sixteen cases of acute rheumatic fever. By a similar technic, in which the sediment of blood, after hemolysis had taken place in distilled water, was planted, the organism was isolated from the blood in four out of seven cases, in two cases from stools, and in one from the tonsils. The strain was isolated from the joint in a case of articular rheumatism without muscle involvement. This strain, together with others, formed very long chains and clumps on broth, produced relatively non-adherent large moist colonies surrounded by a zone of green on blood agar plates, and when injected into animals, reproduced the picture of rheumatic fever very closely indeed, producing transient nonsuppurative arthritis, the exudate showing few or no organisms, and a sub-

* Read before the Alameda County Medical Association, July 21, 1914.

endothelial nodular endocarditis in the same animal repeatedly, together with pericarditis in a number of animals. Ulcerative appendicitis, iritis, and conjunctivitis occurred not infrequently after intravenous injection of these strains.

"These strains consist of diplococci and short chains and produce from the beginning a slight hazy and indefinite hemolysis. When these strains, together with other strains of streptococci which are made to resemble these, are injected into animals, they produce an embolic nonsuppurative myositis involving chiefly the flat muscles and more tendinous portion of the muscles of the extremities, a severe myocarditis involving the right ventricle, and arthritis and endocarditis similar to the strains from the cases in which the muscles were not involved. It must not be supposed that the lesions in the muscles are accidental. They occur only at a certain grade of virulence, and at this point the affinity for the muscles is so marked that the number of lesions obtained is in proportion to the size of the dose injected. After one or two animal passages it is again completely lost, and it is now impossible again to produce the muscle lesion.

"A third type resembles those described as micrococcus rheumaticus. They were obtained from cases without muscle involvement, produced small grayish colonies without a green or hemolytic zone, and simple endocarditis and arthritis without myositis and myocarditis when injected intravenously in animals."

Thus we may the more readily comprehend the possibility of malignant endocarditis associated with the presence of streptococcus viridans in blood as a complication of pneumonia or of acute rheumatism since unquestionably the same transmutability is possible within the human body because the same variable degrees of oxygen tension can be found here as in the shake culture employed by Rosenow in his laboratory work. The probable place where this occurs is in the depths of the crypts of the tonsil, etc.

Of course, when the condition complicates puerperal infection which is commonly streptococcic, and other septicemias there is no difficulty in tracing the cause of the endocarditis.

Regarding the mode of entrance, Rosenow, judging largely by the work of Davis and Billings, suggests that the oral cavity most commonly affords the organism admission, and that the order of frequency is here, tonsil, pyorrhea and blind abscesses about the teeth. The lesions in the valves are embolic in origin leading to avascularization of the valves with subsequent breaking down or ulceration of the endocardium, and large cauliflower-like vegetations ensue.

SYMPTOMATOLOGY.

The onset of the disease is so variable in different cases that it has led medicial writers to distinguish between certain types, such as the septic, and the typhoid, and a cardiac and cerebral group. In general one might say, however, that there is an irregular fever, with sweats and a gradual general asthenia with delirium in a large percentage of the cases.

The septic type is usually encountered secondarily to a more or less localized infection elsewhere, such as a tonsillitis, pyorrhea, blind abscess of the teeth, puerperal sepsis, infected wounds, etc. In such cases there is the usual septic type of temperature with big daily variations accompanied frequently by chills and heavy sweats. The heart symptoms are variable and dependent upon the valves involved, or the myocarditis or pericarditis present, and at times may offer little or no evidence of its condition save in the physical findings.

The typhoid type is said to be by far the most common, and is characterized by a fever of more constant type, with lesser remissions, delirium and stupor, profuse sweats and prostration and frequently a goodly number of liquid bowel movements.

Bromwell distinguishes a cardiac group in which patients with chronic valvular lesions give evidence of a recent endocarditis on the old lesion accompanied by acute symptoms, and Osler adds a cerebral group giving the symptoms of a basilar or cerebro-spinal meningitis. Joint symptoms of varying grades of severity are common in all forms.

Petechial rashes are common and erythematous ones not infrequent.

The urine may or may not show albumin and casts, but frequently does in the severer types. Streptococci may be found.

The blood findings are variable and while Osler states that there is a marked leukocytosis in infective endocarditis, the cases which I have seen did not show a high grade of leukocytosis at any time, and particularly in the earlier stages, although the differential count showed a relatively high percentage of polymorphoneuclears as the rule. Blood cultures, of course, show a streptococcus in the particular group of cases under consideration.

The course of the disease depends largely upon the type but is almost invariably progressive and while some are of the fulminating rapidly fatal type, others show a remarkable tendency to chronicity as in one case which I have had under observation for some months and in which the onset dates back probably a year from the present time. Again the course may be rapidly changed by the occurrence of embolism, which is quite common and presents variable clinical pictures depending upon the site of lodgment of the embolus. It may involve the central nervous system giving rise to various types of paralysis; infection of the kidney may occur with hematuria. The smaller branches of the mesenteric arteries may become plugged and give rise to ulceration and cause blood to appear in the stools. In one case we saw an acute gastric ulcer with hematemesis, a condition which Rosenow has been able to produce experimentally by the way and from old scars of gastric ulcer he has isolated a streptococcus and diplococcus. In the case of gastric ulcer above recited and concerning which I had some correspondence with Rosenow, he predicted a rapid subsidence of the ulcerative process because of the very low affinity the streptococcus viridans possesses for the mucous mem-

brane of the alimentary tract. His prediction was verified, all evidence of the process disappearing in about 16 or 17 days.

TREATMENT.

The treatment of this condition has been notoriously unsatisfactory, and we must realize that the most to be accomplished is in the way of prophylaxis. The physician must pay more attention to the teeth and tonsils, particularly in cases which give a history of rheumatism or give evidence of old sclerosed valves since these are prone to reinfection.

Regarding the active treatment of the condition, little is to be said of drugs as ordinarily used. Sodium salicylate (and I much prefer the natural wintergreen product to the synthetic salicylate) has been recommended in large doses.

Antistreptococcic serum (polyvalent) is likewise recommended as is the intensive vaccine treatment. An autogenous vaccine is preferable to the stock vaccine and the doses should be increased as rapidly as possible until some effect is obtained, or the dose reaches a thousand million.

Leukocytic extract should be given a thorough trial, and I believe is very helpful.

Another method is the injection intravenously of magnesium sulphate according to the manner of Harrar, who employed it successfully in the treatment of septicemia complicating streptococcus infections of a puerperal nature. This latter process was employed in a case which I saw with Dr. George Reinle and which he will report later. It would seem from our experience in an isolated instance to offer more in the way of treatment of this condition than any of the foregoing remedial measures.

An interesting feature in the use of magnesium sulphate in the case referred to was the change in the blood-picture (an increasing leukocytosis) following each intravenous administration, as will be clearly shown in Dr. Reinle's report of the case.

Through the kindness of Dr. May Sampson, of Berkeley, I am enabled to report the following case:

Miss W. Age 23. Single. Occupation, office nurse for physician. Has been exceptionally well and strong throughout her life and except for measles, escaped the ordinary diseases of childhood. At intervals during the last two or three years has had some distress and pain in right iliac region. Patient thought that for a week or two she had been somewhat sleepy and tired and slightly constipated. No history of typhoid or tuberculosis except for a short association with a relative who had tuberculosis of the throat, and this a period from two or three weeks previous to present illness. Family history is negative.

Present history begins April 7th. While at her usual work she complained of headache with general feeling of lassitude and malaise. Her temperature at this time was 102.8°. An examination of the throat by Dr. F. W. Edmonds in whose employ she was, proved negative. She was sent home and to bed. During the next three days complained still of headache and more or less general soreness and aching. On April 10th she was seen by Dr. May Sampson, of Berkeley. At this time she still complained of the headache, felt chilly and had a slight cough and great thirst. There was no pain. Patient was menstruating nine days before period was due, a thing which had never occurred to her before. Tongue was heavily coated. There was tenderness in the right iliac region without rigidity of abdominal muscles. Examination of chest was negative except for a small patch in the lower lobe posteriorly, which gave a roughened breathing of a bronchial type. Heart was apparently normal. Temperature 105°. Pulse 112. Respirations 32. Blood count 6000 leukocytes; polyneuclears 58%; large mononuclears 8%; small mononuclears 34%.

April 11th. Blood count remained the same. Morning temperature 98°. Pulse 88. Respirations 20. Widal examination by the Berkeley Board of Health was negative; 8 p. m.,' temperature again rose to 104°.

April 12th. Blood count 6800. Polynuclears 73%. Large mononuclears 8%. Small mononuclears 18%. Urinalysis—Sp. Gr. 1012. Acid. Trace of albumin and many cylindroids. A few pus cells.

At this time Dr. David Hadden was called in because of tenderness persisting in right iliac region. His findings were negative for appendicitis and a diagnosis of a probable typhoid was made.

April 15. Widal made by the Berkeley Board of Health, negative; malaria negative, likewise. Blood count 7200. Large mononuclears 8%. Polynuclears 76%. Small mononuclears 15%.

April 15th. Urinalysis by Western Laboratories showed a trace of albumin and some cylindroids. Diazo absent. Report on the blood from same laboratory was to the effect there was some clumping, but that the loss of motility was not complete, a partial Widal. Blood count 7200. Differential was not made.

April 16th. Berkeley Board of Health reports a partial Widal. Western Laboratories give the same report and negative for para-typhoid. At this time the diagnosis of typhoid seemed fairly well established because of the low blood count, the partial Widals reported by both laboratories, and with more or less tympanites, with gurgling in the right iliac fossa. The spleen, however, was not palpable and there were no rose spots. Heart findings were still negative.

On April 17th a soft systolic murmur was noted in the tricuspid area.

April 20th. Temperature range up to the present time was between 104.4° in the evening and 98° in the morning. On the 11th the morning remission became less, and the evening rise dropped to 102.4° during the next two days following when it again mounted to 104.4° on the evening of the 15th, the morning temperature remaining about 101°. It continued thus for three days when, on the evening of the 18th it reached 105.2°. After this the temperature curve assumed a more characteristic septic type. Widal reported negative by Western Laboratories; partial by Berkeley Board of Health. Blood count in the afternoon 15,400. Polynuclears 88%. At this time it was my privilege to see the case with Dr. Sampson. Patient now complained of photophobia, pain in back of neck, and dyspnea. There was a slight jaundice and the abdomen was tympanitic. The spleen was somewhat enlarged. Examination of chest revealed some dullness in the region of the right lower lobe, a very slight edema of the lungs and a systolic murmur over both tricuspid and aortic areas. Patient had first definite chill during the day, but had had some sweating for a few days previous. Diagnosis of malignant endocarditis was made. Blood culture had been taken in the morning and two c.c. of leukocytic extract had been given. At this time the temperature was 98.2°. Pulse 96. Respirations 28. Cough was more or less troublesome.

April 21st. Blood count at 4:15 p. m. was 9080. Polynuclears 86%. Blood culture revealed a streptococcus. At 1 p. m. there was a chill which lasted half an hour. Cough was quite troublesome and considerable mucus was vomited. Patient was very drowsy and breathing was labored. Tem-

perature had again fluctuated between 104.2° and 102.6°.

April 22nd. Same symptoms persisted. Heart murmurs became louder and rougher and dyspnea more intense. Blood count 8600. Polynuclears 91%.

April 23rd. Blood count 13,400. Polynuclears 82%. Patient's condition about the same. Temperature varied between 101° and 102.8°. Dr. Philip King Brown was called in consultation and diagnosis corroborated. He advised use of polyvalent antistreptococcic serum.

April 24th. The edema of the lungs became more intense, dullness over right lung changed to flatness, manifesting fluid which was later in the day withdrawn.

April 25th. Temperature in morning 99°. Pulse 118. Respirations 54. Cyanosis deepened, dyspnea increased, heart murmur loud. Same symptoms persisted throughout the day and mental confusion became more marked. Pulse became more feeble and there was bronchial breathing, and dullness over left lower lobe. Temperature rose from 99° at noon to 104° at 4 p. m. and remained high. Dyspnea and cyanosis increasing until death occurred shortly after midnight.

Permission was obtained to hold a post mortem which was performed by Dr. Gertrude Moore, whose report is hereto appended:

AUTOPSY ON THE BODY OF MISS W.

An autopsy performed about ten hours after death shows considerable post mortem lividity in the dependent parts with a subcutaneous edema of the lower extremities. The abdomen is distended. Rigor mortis is marked.

The pleural cavities are filled with a blood-stained fluid. The abdominal cavity is well filled with a clear straw-colored fluid. The peritoneal surfaces are everywhere smooth and there are no adhesions. The appendix is normal. The pericardium contains very little more fluid than normal.

In the lower lobes of both the right and left lungs there are irregular, dark red patches which are firm to the touch and do not crepitate. The cut surfaces of these portions of the organ exude a bloody fluid. The remaining portions of the lung are normal.

The heart is slightly larger than normal. The pericardial covering is smooth and glistening with the exception of an area the size of a quarter located on the anterior surface of the left ventricle about one inch above the apex, which is whiter and thicker than the surrounding membrane. The aortic orifice is almost completely closed by a fibrinous mass which is rather firmly attached to two of the valve leaflets. The tricuspid valve is also the site of a fibrinous deposit. On this valve, however, the fibrin is softer than that involving the aortic valve and is less firmly attached. One of the leaflets of the mitral valve is slightly roughened and has a linear deposit of fibrin about 3 mm. from the free edge of the valve.

The liver is somewhat larger than normal, lighter in color and cuts with a decreased resistance. The cut surface is faintly mottled, light areas alternating with darker patches.

The spleen is about one and one-half times its normal size. The capsule is tense and it cuts with decreased resistance. Its pulp is soft and dark red. The kidneys are very slightly increased in size and the capsules strip easily, presenting a surface lighter than normal in color with many small bright red pin-point-sized areas. The cut surface shows a somewhat thickened cortex, the markings of which are lost. The blood vessels are in places considerably engorged, but the parenchymatous tissue of the organ is lighter than normal.

The pelvic organs are normal except for a marked retroversion of the uterus.

ANATOMICAL DIAGNOSIS.

1. Subcutaneous edema.
2. Hydropericardium (slight).
3. Hydrothorax.
4. Hydroperitoneum.
5. Acute lobular pneumonia.
6. Chronic localized pericarditis.
7. Acute valvular endocarditis, aortic, tricuspid, and mitral.
8. Parenchymatous degeneration of the liver (early).
9. Acute splenitis.
10. Acute parenchymatous nephritis (early).

Case 11. (Seen with Dr. Geo. Reinle.) Mrs. B. Age 40. Married. Occupation, housewife. Family history negative. Has been exceptionally well and strong throughout her life, except for the diseases of childhood.

Was seen on March 28th, 1914. The history is that on March 26th she was taken suddenly with pains more or less general in her abdomen with some nausea; the following day when seen by me, the pain had localized in McBurney's point, rigidity of muscle was pronounced, blood count leukocytes 27,000, polymorphonuclear 92%, small mononuclear 7%, large mononuclear 1%, eosinophiles 2%, temperature 101.4°. A diagnosis of appendicitis was made and immediate operation advised. Operation performed that same evening; an appendix filled with pus and very adherent was found, which ruptured on being removed. A drain was allowed to remain in the abdomen for one week. Temperature became normal on the third day and remained so until the 10th day of May; patient had been sitting up and about to leave the hospital.

May 11th, patient developed a tonsillitis.

May 12th, 4 a. m., had a slight chill; temperature 103° F. 12 m., chill, vomited, temp. 104.4°. 4 p. m., headache and chill, temp. 101.4°. 12 p. m., chill lasting twenty minutes; temp. 103.6°.

May 13th, 4 a. m., chill lasting ten minutes followed by free perspiration; temp. 100°. 8 a. m., temp. 101°, slight chill. 12 m., chill; temp. 101.2°. 4 p. m., temp. 104°. 8 p. m., temp. 108°. 12 p. m., temp. 103°. Blood count, whites 13,000; polys 75%.

May 14th, 4 a. m., temp. 103.2°, severe chill. 8 a. m., temp. 105°. 12 m., temp. 104.8°. 4 p. m., temp. 105.4°. 8 p. m., temp 103° 12 p. m., temp. 103°. Blood count, whites 12,000; polys 84%.

May 15th, 4 a. m., temp. 102.8°. 8 a. m., temp. 105.8°. 12 m., temp. 106°. 4 p. m., temp. 104°. 8 p. m., temp. 104.2°. Severe chill followed by patient perspiring freely. 12 p. m., temp. 104°. Blood count, whites 12,000; polys 84%.

May 16th, 4 a. m., temp. 100.4°. 8 a. m., temp. 106°. 12 m., temp. 104°. Chill. 4 p. m., temp. 104°. 8 p. m., temp. 106°. 12 p. m., temp. 104.4°.

May 17th, 4 a. m., temp. 104.8°. Chill. 8 a. m., temp. 104°. 12 m., temp. 103°. 4 p. m., temp. 102.8°. 8 p. m., temp. 104°. At this time 2 c.c. leukocytic extract made by the Western Laboratories of Oakland, was injected intramuscularly and was injected daily until the second day of July.

May 18th, 4 a. m., temp. 103.4°. 8 a. m., temp. 104.6°. Chill. 12 m., temp. 105.6°. 4 p. m., patient perspiring freely; temperature dropped to 101.8°. 8 p. m., temp. 103.4°. 12 p. m., temp. 104°.

May 19th, 8 a. m., temp. 103°. 12 m., temp. 103.4°. At this time a soft systolic murmur was heard in the tricuspid area. 4 p. m., temp. 104.4°. Complains of pain in the left elbow.

May 20th, 8 a. m., temp. 103.4°. Complains of severe pain in right ankle: ankle swollen and tender. 8 p. m., temp. 102°.

May 21st, 8 a. m., temp. 102.6°. 4 p. m., temp. 104°.

May 22nd, 8 a. m., temp. 100.4°. Pain continues severe in right ankle and left elbow. Both joints red, swollen and tender. Blood count, whites 16,000; polys 85%. 4 p. m., temp. 102°.

May 23rd, 8 a. m., temp. 99.8°. 4 p. m., temp. 103.4°.

May 24th, 8 a. m., temp. 101°. 8 p. m., temp. 103.4°.

May 25th, 8 a. m., temp. 101°. Pain continues very severe in leg and arm. 4 p. m., temp. 104.4°.

May 26th, 8 a. m., temp. 102°. 4 p. m., temp. 104.8°. Blood culture taken by Western Laboratories showed many streptococci after forty-eight hours incubation. Blood count, whites 12,000; polys 80%; red count 4,100,000.

May 27th, 8 a. m., temp. 103°. 4 p. m., temp. 104.4°. At this time 400 c.c. 2% C. P. magnesium sulphate solution was injected intravenously; eighteen minutes were consumed in injecting the 400 c.c. solution, injecting 20 c.c. per minute, which seems to me an important part of the technic in this treatment.

May 28th, 8 a. m., temp. 102.8°. 8 p. m., temp. 104.8°. Blood count, whites 16,000; polys 91%.

May 29th, 8 a. m., temp. 102.4°. At noon 400 c.c. 2% magnesium sulphate solution was again injected, following the technic of the previous injection. Blood count, whites 15,400; polys 89%.

May 30th, 8 a. m., temp. 101.6°. 8 p. m., temp. 102.6°. White count 17,200; polys 89%.

May 31st, 8 a. m., temp. 101°. 8 p. m., temp. 102.6°. White count 15,400; polys 82%.

June 1st, 8 a. m., temp. 101.4°. At noon 200 c.c. magnesium sulphate solution was injected. 8 p. m., temp. 101°. White count 16,800; polys 81%.

June 2nd, 8 a. m., temp. 100°. 8 p. m., temp. 103.2°. White count 18,400; polys 84%.

June 3rd, 8 a. m., temp. 99°. 8 p. m., temp. 103°. White count 18,400; polys 84%.

June 4th, 8 a. m., temp. 99°. 8 p. m., temp. 102.4°. White count 20,800; polys 86%.

June 5th, 8 a. m., temp. 99°. 8 p. m., temp. 102°. White count 23,600; polys 87%.

June 6th, 8 a. m., temp. 100°. 8 p. m., temp. 100°. White count 22,400; polys 87%.

June 7th, 8 a. m., temp. 101°. 8 p. m., temp. 103°. White count 21,400; polys 86%.

June 8th, 8 a. m., temp. 99.6°. At noon 400 c.c. magnesium sulphate solution was injected intravenously, followed by nausea. 8 p. m., temp. 104°. White count 23,000; polys 89%.

June 9th, 8 p. m., temp. 101°. 4 p. m., temp. 104.4°.

June 10th, 8 a. m., temp. 100.4°. 8 p. m., temp. 103.6°. White count 22,600; polys 88%.

June 11th, 8 a. m., temp. 99.4°. At noon 400 c.c. magnesium sulphate solution was injected intravenously, followed by a severe chill. Blood culture was taken at this time and remained sterile after seventy-two hours of incubation. 8 p. m., temp. 102.6°.

June 12th, 8 a. m., temp. 99°. 8 p. m., temp. 102°. White count 23,800; polys 92%.

June 13th, 8 a. m., temp. 100°. 8 p. m., temp. 102.4°. White count 23,800; polys 89%.

June 14th, 8 a. m., temp. 99°. 8 p. m., temp. 101°.

June 15th, 8 a. m., temp. 99°. 8 p. m., temp. 101.8°. White count 19,400; polys 84%.

June 16th, 8 a. m., temp. 99.4°. 8 p. m., temp. 101.6°.

June 17th, 8 a. m., temp. 99.4°. 8 p. m., temp. 102.6°. A large abscess had developed in the forearm, which was opened and 500 c.c. of a thin pus was removed.

June 18th, 8 a. m., temp. 99.2°. 8 p. m., temp. 102°.

June 19th, temperature still the same. White count 8,400; polys 84%.

June 20th, temperature the same as preceding day.

June 21st, temperature continues the same. White count 17,800; polys 81%.

June 22nd, white count 18,000; polys 82%. Temperature continues to range between 99° and 102° plus.

June 24th, white count 17,600; polys 91%.

June 26th, white count 17,800; polys 83%.

June 27th, abscess opened right thigh from which 1000 c.c. of pus was removed.

June 29th, temperature 99° and continued so until July 3rd, when temperature reached 103°.

July 4th, 8 a. m., temperature was normal. White count 14,600; polys 87%. On July 9th patient complains of pleurisy of the left side.

July 10th, pain still severe.

July 14th, white count 22,000; polys 89%.

On July 17th left thorax was aspirated, 1000 c.c. clear fluid was removed, when temperature dropped to normal and has remained so ever since.

On July 20th a blood culture was again taken, which remained sterile after seventy-two hours of incubation. The patient has so far entirely recovered, excepting a slight ankylosis of the right knee, due to a septic arthritis. The murmurs in the heart have entirely disappeared.

To recapitulate, this case seems to demonstrate that magnesium sulphate not only destroyed the infection in the blood current, but also increased the leukocytes very materially. Whether this was due to the magnesium sulphate alone, or to the combination of magnesium sulphate and leukocytic extract, we have been unable to tell. According to Harrar of New York, who has used magnesium sulphate in about forty cases of puerperal infection, the action of magnesium sulphate injected intravenously is not known.

This case was a malignant endocarditis, due to a streptococcemia, the infection primarily coming from the tonsils.

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AFTER MEDICINE, WHAT?

By RAYMOND RUSS, M. D.

A friend, a recent graduate who has been filling a long internship in an eastern hospital, has faced a tragedy. He writes that as the result of septicemia he has lost his right hand. His letter is galled by woe and in his helplessness he curses the influences which thrust him into medical work. "My training is purely technical," he has dictated, "to what benefit can I turn knowledge that demands hands as well as head? The years which I have spent in preparation are wasted; yes, worse than wasted, for my heart was in my work and I cannot stifle my interest."

His unhappy state has aroused the pity of all that knew him. Pity is one of the few commodities we bestow with a lavish hand; it is far more difficult to give help. Let us take the measure of the problem. Here is a young fellow after our own hearts. Avidly he has looked forward to medical work, "that full delight," as Stephen Paget puts it, "of pulling people out of death's way." The monotony of the first years had been lightened by the thought of what was to come, and when medical and surgical works placed power within his hands, there came the longing to put his knowledge to the test. The hospital had given added

zeal, for humanity was now his text-book and the sacred privilege of giving relief the direct reward of study. Each day brought new problems which clamored for solution, problems which lived and breathed and had a being. What were mathematics and languages, history and economics compared to such a subject? Then, when he had gathered all he could, when he felt that he was ready to fight disease single-handed, this awful thing had happened; thwarted ambition, dependency, helplessness, therefore his bitterness.

But if we choke our pity, suppress the sympathy we do not give as readily, and look at this young doctor's training from the standpoint of cold fact, we are not so certain of his limitations. Although he has been fitted for a highly technical position, his education in what we may rename as the humanities is broad. He has been taught a process of deductive reasoning which outclasses all others, because it deals with things, not thoughts. He has been trained to examine minutely and to weigh carefully each condition in the balance of judgment. We call it diagnosis.

He has seen the fallacy of superficial thought and knows that to accomplish his purpose he must grasp only what is concrete and essential. He has been warned to receive without credence that which is told him, unless weighted by authority, and that the joys, pains and passions of men are not necessarily criterions of their real status.

He has learned the necessity of self-reliance, of coolness and intrepidity in the presence of emergency. He knows that excitement is the foe of judgment. He has mapped his work upon the human body in sickness and health by studying its minutiae in the greatest detail, and the measure of success in solving any problem is the same. He has a thorough appreciation of his position. He is in constant fear of making a mistake, for no other error compares in damage done with a medical blunder.

His charity has been tempered by common sense; his theories bastioned by practical premises, for on his clarity of thought depends his living. He is accustomed to shoulder grave responsibilities and to carry them without sagging at the knee, and his shoulders may be scarred by the knout as well as the burden. The processes of life never become so common as to withhold his admiration and each new discovery increases his wonder. He is "great in counsel and mighty in work." Above all, his primer is man, his workshop is man, his thoughts are centered on man and his welfare, and man has been the study of novelists, statesmen, philosophers, psychologists, historians, economists and sociologists for all time. Wherein is his training narrow, in what respects is it inferior to subjects which are grouped under general culture? With such a grasp upon essentials why should not the medical man rise to high stations in other lines?

Yet few physicians ever change their calling, and if some object to this term, let them know that it is used on Stevenson's authority. "If any man love the labor of any trade, apart from any question of success or fame, the gods have called him." If any man feels a call to his work that hallowing experience belongs to the physician, and his sacrifices on the altar of Esculapius are many. He snatches short hours for medical reading, he uses vacation periods for medical improvement, he shuts himself away from the world of affairs until he is a kind of Gnani. Is it surprising friends say "he is of us but not one of us?" His singleness of purpose renders him poor company outside his medical set. He used to emphasize these differences by peculiarities of dress, but that was unessential. It is not necessary to smell ether on a doctor in order to know his business.

Some have argued that this concentration is most narrowing, leads to self complacency, promotes bigotry and an ignorance which is stultifying. They say that few physicians know what is going on in the world, yet when pain gives warning of something extraordinary going on in their interiors, they call a self-centered doctor. What care they how much he knows of politics, art, music or literature? If he has an avocation it will, at that crucial moment, count against him. They want a practitioner who will make them well. Intensely practical old Ambrose Paré says, "People came to me, not because I had a surgical degree, but because they knew I could set them on their legs again, if anybody could."

A physician in a college town once said that he was glad he had studied the higher mathematics for it enabled him to converse with the professor on the fourth dimension. It is difficult to imagine a mental composition which would appreciate such a subject on a sick bed, and one must half believe the learned professor was only tolerating the little doctor, whose conception of mathematical space must have been most vacuous.

So "interesting cases" must continue to be the subject matter of physicians when they meet, and it is unwise for them to talk to patients of the many affairs in the great world without, except when they are convalescent and then the doctor is not wanted. If he rides hobbies, he had best stable his mounts. This isolation is one of the severest demands which medical practice makes on him whose culture is broad and whose interests are diversified, but singleness of purpose is an arrant necessity. If one would escape the toils of practice he must unconditionally surrender practice, and few with plus health, though wealth be minus, would contemplate such a step. But the problem in which we are concerned is different; it has to do with a one-handed physician,—one whom Fate has divorced from calling.

Literature is open to any man who possesses a typewriter, yet as someone has said, it is a temptation and not a vocation. The man who has a penchant for scribbling is under a severe handicap, the snail who must bear his shell throughout the race is not worse off; moreover, scribbling is a hard disease to cure for itching fingers are only relieved when they grasp a pen. Some physicians have gained renown by distributing ink; when we look over the list we must set aside such old fellows as Rabelais, for the medicine of Galen wore swaddling clothes (Rabelais would have said

diapers). Even such a worthy name as Goldsmith we are in doubt about, for did he not fail ingloriously to make a living at surgery, and when he says in all sincerity in his Animated Nature that vertebrates move their upper jaws as well as their lower ones, for Buffon the great French naturalist told him so, we no longer wonder at his lack of surgical success and realize what a fool his jocular acquaintances sometimes made of him.

However strongly we may condemn the old knowledge, we must admit the value of medical training on literary suns like Thomas Browne, Smollett, Garth, Keats, John Brown, Holmes and the poet laureate. One hand will be quite sufficient for our young friend to annihilate all the choice thoughts he has chased to cover, and if he be guilty of verse, he may sing himself into an attack of laryngitis so long as others are not disturbed. But if he possesses the ability to write entertainingly, his medical acquaintance with human nature should have given him abundant material, and to this he can add a deep insight into character, an eager sympathy and a full appreciation of the problems of life.

If our doctor should have a taste for fiction he will be a heretic in the eyes of those who support the old order; his stories will be slices of life and not the small, well-rounded sweet-cakes that are served by the magazines. He will be a realist and his work will show the same care, the same culling for essentials, which has brought him success in diagnosis. The ability to make general deductions, the truth of which is apparent, by a careful examination of important yet seemingly unrelated facts, is as striking in artistic fiction as in medical reality.

There comes to mind a pleasant day in old Philadelphia when the writer was cabbed about by a famous surgeon from one relic of revolutionary times to another. We drank in all the old inns, saw mad Anthony Wayne slyly creeping from his lodgings to get his grog at the corner, chased the chaise of Dr. Benjamin Rush, lolled on the bench at the church door with Washington's niggers all in spotless livery, marveled at the placid countenance of the first treasurer of our country who dumped his private fortune in the common pot, gazed wide-eyed on bewigged aristocrats of the time as they told many naughty tales which do not figure in school histories, looked upon the resting places of noble men almost forgotten by the busy city. "Some day, when I get the time," said my companion, "I'll write a bully magazine article about it all." But the years are slipping away and the article, of course, is not yet written.

Our young friend might take a fling at public life, for with much wriggling and twisting he could force a place among the ranks of lawyers who gorge themselves at the public trough. Attorneys are indifferent lawmakers and careless business men, for the making of laws bears no relation to the expounding of them, and one may well advise another what to do and fail signally in the conduct of his personal affairs. The physician is wiser than the lawyer for he never attempts to treat himself. Our profession should be indispensable to every legislative body, for questions of public health are live issues and the making of laws by the competent would save much freak legislation.

Education in public health work began with the people. Before their pressure our state legislatures have capitulated, but these questions are just attaining the federal backing they deserve. The solution of the problem in Germany has been reversed. It began with the central government and is being slowly forced upon the comprehension of its citizens, for the German's bedroom is still a safe deposit box and any additional air is manufactured on the premises.

The physician has had his hand on the people's pulses long enough to know them thoroughly. He sees in the masses a public, not a restricted class, not a collection of friends, not a certain trade, combination or fraternity who would seek private ends, not a corporation for which he begs privileges. The rich and poor have been his care. Who knows better than the physician their needs?

Our legislatures of attorneys have their opposites in the countries of South America. Some of these countries are great and well governed, and here are found lawmaking bodies in which men who have received a medical training largely figure. Who dares to say that our wretched system of legislation is superior?

It is an old adage, and one firmly believed by the people, that a good doctor is a poor business man. Sometimes this belief confronts one when he endeavors to collect a bill, but a physician would not object to the prefix poor if a check accompanied the statement. He always becomes a better doctor after the bill is paid. The belief that physicians are poor business men needs demonstration, for it is a relic of the old days as firmly fixed in the lay mind as the efficacy of the onion poultice.

If a physician knows little about investments, it is because he has little money to invest. If he trusts his neighbor too implicitly it is his own fault, for no one should know his neighbor better than he. A little study of the gross structure of business and he is ready to buy at 96 and sell on a rise of two points with the rest. It is a dull, sordid, uninteresting game, and it is not to be wondered that those who play a vital one have not a liking for it. Yet there is another side to business, both big and little, a psychological side for which the physician's schooling has eminently fitted him, and in this psychology of trade, a subject just in the making, he will find a field as fascinating as medicine itself, for again he will be dealing with diagnosis, but applied to men collectively rather than individually.

Our discouraged, crippled, young medico must adapt his facial muscles to his new environment. To lose a hand is bad enough, but to lose one's head is worse, and let him be thankful that it is stored with experiences that can be made to count in many and varied fields. We are not ready to

aver that medical training is so superior that the rank and file should take it up, but we do know that many of us physicians would say, "In no other course of study could I have worked as hard and gained as much."

SPINAL ANESTHESIA.*

By L. L. STANLEY, M. D., San Quentin.

In an article published in the *New York Medical Journal* in 1885, Dr. L. J. Corning described the manner in which he had produced anesthesia by injecting cocaine between the lower spinous processes in a man and in a dog. This was the first known attempt to block the lower nerve segments, by injecting into the back; although Corning did not introduce the cocaine within the arachnoid space. It was fifteen years later, however, that Bier in Germany made the first successful attempt at intradural spinal anesthesia. He was so convinced of the logic and feasibility of the anesthetic, that he allowed himself to be injected, and his assistant followed his example. There were many imperfections in his technic, as well as there were in that of many other investigators who tried the new anesthetic throughout the various larger clinics. Poor results were recorded for the most part, until the discovery of stovaine by a Frenchman, Fourneau. As Fourneau translated into English means stove, the word stovaine was introduced.

Jannesco demonstrated a number of cases about this time, but he had a number of fatalities and disappointment greeted his efforts.

With the discovery of stovaine also came the preparations of the synthetic bodies, tropacocaine and novocaine, which are the principal ones used to-day.

From 1902 until three years ago, little was done with spinal anesthesia, except by Morton of San Francisco and several others, who continued its use.

In 1909, Sellheim reported 1000 major gynecological cases, with one death, while in 1912, Kroenig in Germany reported over 2,500 spinal anesthesias without any fatality or other serious results. Among the more recent investigators are Babcock of Philadelphia, Gellhorn of St. Louis, besides a number of others who have had a considerable experience. Babcock, who has used spinal anesthesia since 1904, bases his experience on over 5,000 operations which he performed with spinal anesthesia, and he remarks that the method is in such favor with him that were he in need of an operation, spinal anesthesia would be his choice. Such opinions have been expressed by his assistants and nurses. His operations consist of 128 on the stomach, 173 on gall bladder, 332 on pancreas, omentum and spleen, 829 on appendix, 129 on intestines, 502 operations on abdominal wall, 57 on gynecological cases, 161 on kidney and bladder and 303 on obstetrical cases, besides about six hundred on genito-urinary tract and rectum. Gellhorn also reports a large number of cases treated successfully with spinal anesthesia. Such records as these show that spinal anesthesia with proper technic is not any more dangerous than the inhalent anesthetica. In this paper I am basing my observations on over one hundred cases operated upon at San Quentin Prison. The operations consist of the following:

Fistula in ano	6
Hemorrhoids	18
Hernia	13
Varicocele	13
Varicose veins (leg)	14
Exploratory laparotomy above umbilicus	2
Urethrotomy	13
Hydrocele	3
Stretching sciatic nerve (bloodless)	2
Bunions	0
Exostoses of os calcis	2
Breaking of ankylosed knee	1
Appendectomy	6
Ventral hernia	2
Gastro-enterostomy	1

In the past three years spinal puncture for the removal of fluid for examination and diagnostic purposes has become so common and has been taught in the colleges so thoroughly and with such perfect technic, that it has become a very simple and extremely safe procedure. In some of the best hospitals, spinal fluid examination has become so common that it has become almost as much of a routine in nervous cases as has the examination of the urine.

PREPARATION.

Among the preparations used now are cocaine lactate, novocain, tropacocaine, cocaine, alypin and stovain. The use of the latter three have been discarded for the most part, while tropacocaine and novocaine are more extensively used. Often these preparations are combined with such drugs as strychnine, which it is claimed counteracts any depressant effects; adrenalin, which keeps up the blood pressure; glucose, which increases the specific gravity; absolute alcohol, which prevents precipitation of the drug, and a number of others of more or less importance. Most authorities use the tropacocaine in one and a half grain doses dissolved in sterile water, sterilized in hermetically sealed glass ampoules. This can be subjected to high temperatures without disintegration. At San Quentin Prison tropacocaine is principally used. It is carefully weighed in one and a half grain quantities and put into thoroughly clean one-half drachm vials (long size). The neck of the vial is held over a Bunsen burner and drawn out in such a manner that the drug is hermetically sealed. The container is then placed in an autoclave and subjected to a heat of 300° for 15 minutes. It is then sufficiently sterilized for use.

Novocaine is also used. It is sealed in the same manner as tropacaine, but as it melts at comparatively low temperature it is intermittently sterilized at a heat of 145°. Stovaine can be boiled without destroying its properties. The dried preparation is easier to prepare and is easily dissolved in the spinal fluid when required.

ADMINISTRATION.

In administering spinal anesthesia formerly at the prison it was the custom to have the patient sit on the edge of the table and bow the back as

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much as possible. After the back had previously been washed with iodine and then alcohol, the spinal needle was inserted into the median line between the second and third or third and fourth lumbar spines until fluid began to drop out. A Leur syringe was then attached and 25 minims of the fluid procured. Detaching the syringe from the spinal needle, a smaller needle was connected to it, and by sucking backward and forward several times the tropacaine in the opened ampoule became dissolved in the fluid. Reattaching the syringe to the spinal needle, the contents was injected back into the arachnoid space with scarcely the loss of more than one or two drops of fluid. The patient was then allowed to sit in the same posture for a few minutes and then laid in the dorsal position. It was found by this technic that anesthesia soon developed in the legs, anus and the lower half of the scrotum, as well as the penis, but above the pelvic girdle sensation was as a rule as good as normal. Reasoning that the tropacocaine being heavier than the spinal fluid gravitates downward, it was planned to inject the anesthetic into the canal with the patient reclining on his side. This was done and as soon as the injection was made the patient was placed in a Trendelenberg position with the head lowered for several minutes. It was found that with the tropacocaine, anesthesia was complete up as far as the nipple line within three minutes, and within five minutes with novocaine. Since that time the reclining posture has been used, and we have yet to record a failure for the anesthetic to be effective.

PREPARING THE PATIENT.

The patient is prepared as for a general anesthetic, i. e., a purge is given the night before and food prohibited the day of the operation, although in some of the cases this has not been done, and the case has progressed and recovered with equally good results. Two cases were allowed to take a drink of water fifteen minutes before the operation. Both of these cases experienced nausea when the intestines were being manipulated. As a rule notwithstanding how well the patient has been purged, he will defecate involuntarily within five minutes after the anesthetic is given. This is due to the relaxation of the sphincter ani, and to the continuance of peristalsis.

PHYSIOLOGICAL EFFECT.

After the anesthetic is administered within fifteen seconds with tropacocaine, there is a sensation of tingling in the feet and a feeling that the legs are warm and beginning to "go to sleep." Shortly afterward the reflexes disappear almost simultaneously with the pain sense. Tendon sense or touch then leaves and shortly afterwards the patient is unable to move his lower limbs. In the majority of cases the blood pressure falls about 10 mm., although there have been some cases in which there has been no fall, and others in which the fall has been as much as 30 mm. The pulse usually drops in rate but on the day following it has been found to be higher than it was the day previous to the operation. In only one case, an appendectomy, did the pulse rate drop enough to warrant a 1/30 grain of strychnine hypodermically. The patient's lips became pale when the cecum was handled, although no discomfort was experienced. One patient operated on for varicose veins had albuminuria and an intermittent heart. Shortly after the administration of the anesthetic, the heart became regular and continued so until the anesthetic had worn off, when it resumed its irregularity. His rate, however, went as low as forty-eight beats per minute. In no case was there any respiratory disturbance, although in the majority of cases the patient would take a deep breath several times during the operation. Never has artificial respiration been resorted to in my experience. The action of the pupils has not been influenced by the anesthetic, and for the most part they have remained normal in size. The attitude of the patient has generally been good, although some have been rather frightened.

It has been a common occurrence to allow the patient to smoke while he is being operated upon, should he care to do so. One case experienced nicotine poisoning after he had smoked a strong cigar (a usually rare article in prison) during an operation for hemorrhoids. No soporific has been administered before operation, and in a large number of the cases the patient walks to the operating table and mounts it himself without the aid of nurses. The patients as a rule are quite voluble. Some are curious enough to raise their heads and observe the field of operation.

DURATION AND DOSAGE.

The duration of the anesthetic lasts from forty-five minutes to two hours, doses of one and one-half grains. In one appendectomy the effect wore away in forty-five minutes, and before the operation could be completed, ether had to be administered. We have found that a dose of three grains of tropacocaine lasts longer and gives no proportionately ill effects. In fact, the five or six cases in which the larger doses were given complained of no ill effects following.

ILL EFFECTS.

The only ill effects which have been experienced is the headache, and occasionally pain in the region of the back where the puncture was made. The headache is sometimes frontal, but occasionally at the base. It is usually severe, but is frequently relieved by the application of a counter irritant such as tincture of iodine or by the reclining position in bed. The cephalagia was severest when the patient would stand up quickly. This headache seldom lasted more than four days. We thought that this headache was due to the introduction of air into the spinal canal, accordingly the technic was slightly modified to exclude any air, with the result that about 50% complain of headache, whereas, about 90% complained before. One patient operated upon for varicocele was troubled with retention of urine for two weeks after operation. His power to urinate suddenly returned to him when he had a quarrel with one of the nurses who threatened to administer to him the "black bottle." Another patient operated upon also for varicocele developed a left-sided pleurisy with effusion three weeks after the anesthetic.

No cases of paralysis, tabes, or other permanent injury has resulted from the anesthesia. The day following the operation there is a slight rise in temperature such as would be expected in any operative case.

ADVANTAGES.

The advantages of spinal anesthesia over any other form are great and many. It is easily administered and anyone at all observant of aseptic technic and with an average amount of skill can do the work effectively and well. The amount of apparatus necessary is very small and the surgeon can himself administer it without an anesthetist. The advantage is particularly noticeable in country practice, especially in logging camps and construction work. A broken leg could be set with only the pain of the needle prick in the back.

Following Dr. Crile's theory of anoci association stimuli traveling to the brain from a source of injury, producing shock, it is seen that with the spinal cord blocked there is no chance for shock to result from this cause. In none of my cases has there been any considerable degree of shock, and the patients have recovered remarkably well. It is a common practice to instruct nurses to allow the patients to eat soft boiled eggs, toast and coffee, as soon as they return from the operating room, provided no operation has been done prohibiting such; and as a rule the patients readily eat the meal set before them, having been deprived of their two previous meals. No bad results have followed.

In emergency work no better anesthetic can be administered. An operation which requires immediate attention after an accident, usually results badly if time must elapse for evacuation of the stomach and bowels. It is decidedly an advantage to be able to converse with the patient while operating, for in this way the operator is able to have first hand information of the patient's condition. He knows that the anesthetic is uniform and does not have to contend with variable and untoward results of inhalant administration in unreliable hands. In abdominal surgery with spinal anesthesia, the surgeon does not have to contend with coughing, straining, and struggling of the patient. Many operators are driven to inwardly spoken oaths many times, because the patient begins to come out of the ether at the most inopportune moment, contract his abdominal walls, and force intestines into the field. A contrast is presented with spinal anesthesia. The patient cannot move, he does not cough, because he is taking nothing into his lungs to make him do so; he cannot force his intestines out of the abdominal wound, because his muscles are relaxed and easily retracted as the surgeon may wish. In sewing up the belly wall there is no difficulty, for the tension is gone, and the peritoneum can be grasped and sewed without the protrusion of viscera. This is an advantage of time as well as the operator's patience. There are a number of cases in which the inhalant anesthetics are contra-indicated but these same cases respond favorably and encouragingly to the spinal.

Few anesthetists would consent to give ether or chloroform with absolute safety to a patient who had albuminuria, pneumonia, advanced tuberculosis, pericarditis or endocarditis, and a number of other more or less serious conditions. Spinal anesthesia has no ill effects on such cases.

COST.

The cost of one anesthetic with novocaine is about one and a half cents, while that with tropacocaine is approximately seven cents. The cost of an operation using four ounces of ether, is about twenty cents, without making any allowance for oxygen used. Nitrous oxide anesthesia is infinitely more expensive. This may seem a small factor, but to the hospital of many cases, the saving would amount to a considerable sum.

CONCLUSION.

Basing my experience on one hundred and fifty cases, I find spinal anesthesia absolutely safe and reliable. There is no danger of meningitis. There is no serious after result, except headache, which wears away in a few days. The duration and extent of the anesthetic is long enough and sufficient for almost any operation below the nipples. The advantage in emergency work is very considerable, as well as it would be in many cases in which inhalants are now used. It is simple of administration, requiring no great amount of skill and little assistance.

COMBINED TREATMENT OF SYPHILIS WITH MERCURY AND SALVARSAN.*

By G. W. HARTMAN, M. D., San Francisco.

Due to the complement fixation test, the cultivation of spirochetae, and the new arsenic therapy, the literature of syphilis has increased enormously in the last few years. Thought is beginning to crystallize and results formerly very much at variance are being reconciled. We considered that we got along very well in the pre-salvarsan days with the old intermittent treatment of Fournier and Neisser. There was supposed to be a psychological moment after the development of the secondary signs when treatment was to begin. If before that it would not be so successful. Treatment was continued over a period of two to five years with periods of intensive administration of mercury alternating with rest, during which potassium iodide was given. Relapses occurred frequently which yielded but slowly to treatment or the patient became, in years, a victim of one of the so-called para-syphilitic afflictions, tabes, general paralysis, etc.

It was natural, then, when Ehrlich's "606" was announced, that it should be set upon, administered to every one, by every one, regardless of everything but financial considerations and that it should, for a time, apparently fail. We have had the drug now for three years; I have administered in the neighborhood of 1500 injections and can say it is not a failure.

At the beginning we gave salvarsan alone; except in a few cases it did not give satisfactory results. I can recall two cases, husband and wife, who presented themselves with well defined secon-

* Read before the San Francisco County Medical Society, September 29, 1914.

dary eruptions in whom a single injection cleared up all symptoms.

There has been no return, but I can say nothing of them serologically. (I hope that some day the Board of Health will do Wassermanns for us.) At first we got reactions of various kinds rather freely and so we began the use of mercury in conjunction.

When neosalvarsan became available we tried it and patients who had had both, demanded the new. It is more pleasant to take, reactions are not nearly so pronounced, there is no fever, chills or malaise; in fact, it is hard to keep a patient quiet after an injection. But neosalvarsan does not seem to be so potent; chancres, mucous patches, condylomata and skin eruptions do not melt away so rapidly nor is there that after-feeling of buoyancy and well-being.

Our method of administration has remained substantially the same. We use the intravenous exclusively. It is not necessary, in any instance, to expose a vein. The same vein can be used repeatedly. I am still using this very inexpensive apparatus[1] with complete success, using 125-150 cc. of distilled water for a full dose. There are a number of objections to the highly concentrated (10-20 cc.) solutions. The loss of a few drops means a large amount of the drug and concentrated solutions are more irritating if any escape into the tissues.

The time of the circulation is about eight minutes; 125 cc. will flow through an average size needle in just about that time and give the proper distribution. Much has been said about the necessity for freshly distilled water. We use the ordinary commercial. It is filtered twice through double filter paper, all containers being rinsed with the final filtrate, then put into eight-ounce bottles which are loosely stoppered with gauze, immersed in a water sterilizer and boiled for half an hour on two successive days. This keeps for eight to ten days. New bottles will show a sediment at the bottom due to the solution of some of the glass. These should be rejected. If these precautions are observed reactions will be very rare and will not be due to water. Where reactions are present they are always less at subsequent injections. Complaint was made by one patient who at each injection declared that he smelt garlic. Another became slightly nauseated for a few moments at the beginning of each injection.

Lately I have seen two very striking reactions, both in patients with syphilis of long standing. Neither presented any of the usual contraindications against the use of the drug. In the first, shortly after the injection, there was a severe chill followed by a rise of temperature of several degrees, vomiting and general prostration. The urine was laden with albumen and all kinds of casts, chiefly coarsely granular. This acute nephritis cleared up entirely in about ten days.

The second patient began to cough during the injection and became very cyanotic, insisting that he could not breathe; shortly after his body was covered with raised wheals varying in size up to two centimeters. These were mostly on the limbs; there were a few on the lower abdomen. In an hour they were gone. As he was very nervous the next injection was arranged with the most favorable surroundings and given very slowly. The same phenomena took place. He was anxious to continue the treatment and got five injections in all. In each case with the same result, possibly a little less toward the end.

There are men who go so far as to say that there is no such thing as a soft chancre. Certainly many syphilitic primary sores are not indurated. All should be examined microscopically and if spirochetae are found, mixed treatment begun at once. In this type of case if this be done secondaries may never be seen. Patients do not appear with relapses as often as they did under the old treatment, but time is too short for final conclusions. It is useless to examine the blood at this stage for the Wassermann does not appear so early.

A long chapter might be written on the intra-urethral chancre. A watery discharge in which gonococci cannot be demonstrated, a dirty sloughy looking meatus or a narrowing of the anterior urethra all suggest lues. Occasionally one sees lues and gonorrhea in the same infection. Cases with a primary sore and with indolent, painless swelling of the inguinal glands diagnose themselves. It is interesting to see swellings disappear and the lesions heal under treatment.

In the type of tertiary lesions which gave very poor results with the old methods we have had very good ones with the combination treatment. A number of cases of spinal and cerebral lues responded extremely satisfactorily. A young man of twenty-five was admitted to the City and County Hospital in a state of semi-consciousness with left hemiplegia, opisthotonos and a perforated palate. He was put upon combined treatment at once. Following the first injection he showed a marked improvement, could move his limbs, but complained of severe headaches. After the second injection the headaches disappeared and he was clear mentally. In three weeks beyond a weakness in his left side all symptoms were gone.

A professional man had a sore twenty-five years ago which was declared cured after some local treatment; five years later he had sores on his tongue lasting two or three years. Five years ago he noticed heaviness of his speech lasting about one and a half hours. In January, 1912, he had what he called a "stroke" and then apparently his trouble was diagnosed for the first time. He had four "606's" and 70 rubs with a clearing up of all symptoms, but a persistently positive Wassermann. After a total of 180 rubs and three neosalvarsans, seven in all, the blood became negative. Long before that, however, the patient had gone back to his professional work which involves very fine manipulations and has also supervised the building of a new house.

In tabes, vesical symptoms, retention, pains, etc., have been relieved, but in no case have we seen the disappearance of true tabetic signs, absent knee-jerks, Argyll-Robertson pupils and so forth. When the nerve substance has undergone destructive

[1] Described in Calif. State Jour. Med. May, 1912.

changes there is very little hope of accomplishing anything, but with an active inflammatory process going on results are attained in incredibly short time as compared with the old treatment.

In our routine treatment we start with inunctions of four grammes, giving a course of five, then the first injection, in men, of 0.9 grammes of neosalvarsan, in women, 0.45-0.6 grammes; this is repeated until 30 rubs have been given and three to five neosalvarsans. Potassium iodide in ascending doses is also given. After a pause of six to eight weeks a Wassermann is made; if negative a rest is allowed for four to six months and then another made. Should it, at any time, become positive intensive treatment is resumed until it becomes negative, or until it is demonstrated that this cannot be done. In exceptional cases we have given as high as nine injections.

Craig & Collins[2] report a case in which in 39 injections three grammes of "606" and 117.45 grammes of "914" were given, with complete disappearance of all symptoms but persistence of the Wassermann. The method of giving inunctions is most important. They are best given by a trained rubber. Each rub should last at least 20 minutes, preferably 30. The intramuscular is the next method of choice. Oral administration is very unsatisfactory. Most late recurrences that we see have been those treated by pills, some of them over a period of five years.

In conclusion I should like to say:

(1) Salvarsan and neosalvarsan are a distinct addition to our armamentarium.

(2) They are best given combined with mercury.

(3) Neosalvarsan is more agreeable to the patient but is not so potent.

(4) The intravenous method is the one of choice.

(5) Many technical errors have been wrongly charged to the water.

(6) All chancres should be examined microscopically and if spirochetae are found treatment begun at once.

(7) Central lesions show improvement with the mixed treatment, especially subjectively, much more rapidly under the new therapy.

(8) The attempt should be made if possible to get a negative Wassermann.

(9) Mercury is best given by inunction.

Discussion.

Dr. A. B. Grosse—I can say I agree very heartily with everything said, with the exception of the treatment by inunctions. I was once a great adherent of that form of treatment, but found that many patients either refused to use it or the condition of the skin made it impossible for them to use it. I have found in the last many years that the intramuscular injection is a particularly satisfactory method, because the preparation I have used, an Italian preparation of gray oil, is absolutely painless, even in the type of men and women who, as a rule, cannot stand that treatment. This particular preparation has been thoroughly tried out, has been checked with Wassermann, and has been found to be a very potent remedy.

Dr. M. Krotoszyner—An important field of usefulness of salvarsan lies in its efficacy in primary syphilis. In that stage, we may, by a timely application of that drug, be able to prevent the generalization of the disease. It is, therefore, advisable to treat in the same manner all cases of mixed and of so-called soft chancres, as we may by these means ward off secondary and tertiary lesions which not rarely appear as a sequel of clinically diagnosed chancroid. In fact I believe that the patient at present has a right to demand early treatment before the advent of secondaries, and at least as soon as spirochetae have been found in the primary lesion. The best results for this class of cases are obtained by the combined mercury, salvarsan and iodide treatment and their results are, in case the treatment is carried out over a period of weeks, certainly more lasting and are less liable to yield relapses than in the pre-salvarsan era.

Dr. W. E. Stevens—I would like to confirm what Dr. Grosse says about the use of this Italian preparation of gray oil. I have also used it with very excellent results. It is absolutely painless, and is the only preparation I have ever found that was painless. During the last two or three years, however, I have used inunctions almost exclusively and prefer them to injections.

Dr. G. W. Hartman—There is not much more to say except to agree with Dr. Grosse that the inunctions are disagreeable to use, but this is overshadowed by their effectiveness. I have seen patients become salivated in a surprisingly short time, in less than one series of five rubs. There seems to be some effect which the inunctions possess which the other methods do not give.

Dr. J. von Werthen—Has salvarsan any effect on the arteries, any after effect?

Dr. G. W. Hartman—As far as we have gone, we have not seen any.

[2] Journal A. M. A., June 20, 1914.

THE CLINICAL VALUE OF PERCUSSION OF THE SKULL.*

By W. F. BEERMAN, M. D., San Francisco.

As the value of percussion of the skull as an aid to the diagnosis of diseases within the cranial vault receives but slight mention in the majority of our text books on neurology and surgery, I offer a few instances from my experience to prove that it is one of the best means at our command in the diagnosis and localization of certain cerebral conditions. MacEwen was the first to apply this method of diagnosis and his cases were mostly those of tumor or abscess at the base of the brain pressing on the veins in this locality and thus causing hydrocephalus. According to Koplik, "percussion of the skull at an early period of tuberculous meningitis is certainly one of the most valuable aids in diagnosis."

A brief outline of two cases in which MacEwen's sign was present unilaterally is as follows: Both patients were admitted to the San Francisco Hospital with cerebrospinal meningitis. Examination of the pus obtained by lumbar puncture showed the diplococcus of Weichselbaum. In both cases, percussion elicited a tympanitic note over the right pterion, which was in marked contrast with the normal note over the left. The presence of this tympanitic note was assumed to indicate a purulent distention of the right lateral ventricle. At autopsy the right lateral ventricle in both cases was found distended with pus; the left were normal. By no other means at our command could this associated lesion be diagnosed.

* Read before the San Francisco County Medical Society, September 1, 1914.

A case of hydrocephalus associated with a tumor of the fourth ventricle recently seen through the courtesy of Dr. Newmark gave on percussion a cracked-pot note over the whole of the skull. At autopsy both lateral ventricles were immensely distended. A patient with hydrocephalus, secondary to a syphilitic basal meningitis, was of interest in that the gradual change of note from marked tympany to normal could be followed as the patient progressed to recovery. A brief summary of this case is of interest.

The patient, a male, age 38, complained of excruciating headaches; hallucinations, delusions and illusions, bilateral hemianopsia and double anosmia forming the clinical picture. On percussing the skull, a tympanitic note, comparable to that on percussing over the empty stomach, was obtained over both temporal regions.

The change in note alone seemed to warrant a diagnosis of bilateral hydrocephalus. Lumbar puncture was performed and the cerebrospinal fluid spurted in a stream from the canula. Microscopically, several hundred lymphocytes were seen to the field in the uncentrifugalized fluid. The Wassermann reaction was negative. Under specific treatment, the patient rapidly improved and within 10 days his condition was normal.

The following case is also of interest: Mr. G. had been operated upon for ethmoiditis. Shortly thereafter, he began to complain of headaches. These were slight and only occasional. Four weeks or more following the operation he became delirious and it was with difficulty that he could be restrained. The temperature was only slightly raised, 1/10 to 3/10 of a degree above normal. Kernig's sign was absent. The reflexes were increased. There was no tenderness of the scalp and the patient no longer complained of headache. With the exception of a slight rigidity of the neck there were no physical signs pointing to an involvement of the meninges. Percussion of the skull gave a tympanitic note over both temporal regions, and this sign alone prompted us to diagnose hydrocephalus accompanying meningitis. A purulent fluid was obtained by lumbar puncture.

Percussion of the skull is also of value in other conditions within the cranial vault. According to Bruns, considerable value is to be placed on the presence of a dull note over a suspected brain tumor as a means of differentiation between cortical and subcortical growths,—a dull note favoring a cortical localization. Oppenheim has noted this change especially in tumors springing from the bone or dura-mater. In other cases he has noted a tympanitic note or a cracked-pot sound, especially where a separation of the fissures has occurred or where a tumor has led to a thinning of the bone. It must be remembered, however, that a tympanitic note may be elicited under normal conditions in early childhood and is then of no diagnostic value.

J. O., age 33, was struck in the left temporal region in 1906. In 1913 a marked exophthalmus and proptosis was noted. His memory became deficient. Otherwise the neurological examination was negative. Percussion of the skull over the left orbit elicited a dull note of woodeny quality. At operation a non-encapsulated granular mass weighing about 10 grammes, consisting almost entirely of cholesterin and fatty crystals, was removed with a curette.

An alteration of note would be of value to the surgeon as a guide to the localization of an encapsulated hemorrhage, particularly in cases where the general brain symptoms are more pronounced than the focal unilateral ones; a changed note on percussion would be of diagnostic aid.

The case of hemorrhagic pachymeningitis here reported is instructive because of the presence of a marked tympanitic note over the area corresponding to the hemorrhagic effusion, although in this case the localization was, apart from the percussion note, sufficiently distinctive:

J. P., age 58, lay in deep coma on the right side with the face and eyes rotated upwards and to the right. The head was retracted. The pupils failed to react to light. No determinable involvement of the individual cranial nerves. No evidence of cranial fracture. Firm pressure with the finger over the left temporal region caused this moribund patient to wince. On percussing the skull over this area a marked hollow tympanitic note was elicited. The discs were normal. Examination of the right ear showed a perforated drum, with pus exuding. Both upper and lower extremities were rigid; the upper only to a slight degree. All reflexes were exaggerated; those on the right more so than those on the left. No ankle or patellar clonus. The Babinsky and Oppenheim phenomena were present on both sides. The muscles of the neck and back were rigid.

Kernig's sign was well marked. The skin reflexes were only faintly elicitable. Occasionally clonic convulsions of one-half to one minute duration, involving at first the right side of the face, rapidly followed by movements of the right arm with less marked spasm of the leg were noted. White blood count 22,800. Differential: Polymorphonuclear, 85. Small lymphocytes, 10. Large lymphocytes, 2. Transitional, 3.

The spinal fluid was clear; the pressure was decreased. The globulin content was slightly increased. Four lymphocytes were counted in each field of the stained fluid; no red blood corpuscles or micro-organisms were present.

A diagnosis of abscess with meningitis seemed the plausible one. The presence of otitis media, the clonic convulsions of the right side, the marked local tenderness, the marked tympanitic note on percussion over the temporal region, the leukocytosis and the marked rigidity of the neck and back and Kernig's sign all pointed to a primary lesion on the right side, with secondary meningitis. The presence of pulmonary edema precluded any operative intervention.

Necropsy: The examination of the brain is only of interest. On opening the dura in the left temporal region, a large collection of dark fluid blood was evacuated. This hematoma was encapsulated and caused a marked indentation of the brain substance.

Both lateral ventricles were normal; the left, however, being very much flattened.

The significance of the hollow tympanitic note in this case was misinterpreted, but in the presence of like physical findings there should be but slight hesitation in assuming a collection of fluid within the cranial vault.

The value of percussion in fracture of the skull is shown in the following case: A patient was admitted into the Polyclinic ward at the San Francisco Hospital in the service of Dr. Barrett. The percussion findings will only be noted.

Over the left fronto-temporal region a cracked-pot sound could be elicited, which indicated a fracture at this point. The presence of mental symptoms pointed to a coexisting hemorrhage. The existence of a stellate fracture and hematoma was revealed at operation.

In those instances where a cranial injury is associated with a hematoma on the side opposite to

the seat of the injury, i. e. hematoma or fracture by contre-coup, a change of note on percussion will denote the presence of this condition.

It is advisable in all instances of cranial injury to carefully percuss the whole of the skull.

From the experience gained from these few cases and of others, which have not been included in this paper as no autopsy or operation was made to verify the diagnosis, the writer believes that a tympanitic note over the pterion (unilateral or bilateral) is strong presumptive evidence of the existence of dilatation of the lateral ventricles; especially would this finding be of value if found in cases in which the signs and symptoms of meningitis were rather equivocal, which is not infrequently the case. The case of subdural hemorrhage further shows that a tympanitic note may be obtained in encapsulated collections of fluid situated subdurally or extradurally.

The case of fracture of the temporal bone likewise shows its value. Exceptions to these statements are to be found in those instances of brain tumors causing erosion of the bone or separation of the fissures, or where an atrophy of one or both hemispheres exists.

Discussion.

Dr. J. M. Wolfsohn: I would like to add just one statement. In eliciting the tympanitic note or a flattened high-pitched note which is occasionally found in intracranial growths, mistakes can often be made in interpretation by allowing the patient's head to rest on a pillow. If this is done the hollow sound, which is really due to the contact with the pillow, is almost invariably brought forth. I saw a case several months ago with Dr. Rixford where the note elicited was sufficient to make a diagnosis of hydrocephalus while the patient's head was on the pillow, but on lifting the head the percussion note was found to be the same on both sides.

GUN-SHOT WOUND OF THE EAR WITH REPORT OF TWO CASES.*

By CULLEN F. WELTY, M. D., San Francisco.

Patient, J. T., male, age 23, was shot in the right ear in September 1909. Patient was in a local hospital for one month after he was hurt because of intense vertigo, nausea and vomiting. Facial paralysis was observed on the day following the accident.

Examination, September 1910: Face, complete paralysis. On the injured side the eye cannot be closed; cheek muscles are flabby, all lines obliterated and forehead smooth; mouth is drawn to the opposite side. The condition is accentuated when patient smiles. No response to either faradic or galvanic current. No nystagmus or vertigo. Ear: foul discharge, the meatus considerably contracted from the gunshot wound. The scar is about a quarter of an inch within the meatus, posterior and above. Because of the contracted meatus and the destruction, the parts cannot be recognized. From the location of the scar it is reasonable to believe that the facial was not cut but pressed upon by a fracture. By tuning fork: Weber to the good ear: Rinné negative, heard in the good ear; injured ear completely deaf as proved by Neumann's noise apparatus; caloric reaction negative. By Roentgen ray: bullet located in the petrous portion of the temporal bone.

With a bullet located within the petrous portion of the temporal bone, no hearing on the injured side, caloric reaction negative, the proof is almost positive that the facial nerve is so destroyed that it can never regain function.

Operation: the ordinary radical mastoid operation was performed to remove the bullet and the chronic suppurative process; the entire posterior wall was found to be destroyed by the gunshot; tegmen tympani and antri, intact; no other fracture apparent macroscopically; bullet imbedded to its depth in the region of the promontory of the petrous portion of the temporal bone.

Case 2. Male, age 24. Gunshot wound of the right ear; has been under observation for the past week. Complains of vertigo, double vision, some slight pain on this side of the head; some headache all the time.

Examination: Almost healed wound of the meatus of the right ear. The drum membrane cannot be seen because of blood-clots. Slightly painful over the entire mastoid; more painful over the temporal region. Marked nystagmus to the opposite side, double vision, paralysis of the external rectus, eye backgrounds negative, partial facial paralysis.

Tuning fork examination: Weber to the bad ear, Schwabach lengthened, Rinné, negative; nystagmus to the same side by the introduction of hot water. Temperature from 98°-99½°.

X-ray located the bullet in the middle fossa. The patient was kept under observation for an additional two weeks. At this time it was three weeks from the time the patient was injured. The symptoms remained about the same from day to day; a variation of about a half a degree in temperature. This was about all until the end of the third week, then the temperature went to 103½°; increase of pain about the head; increase of nystagmus; double vision more marked; facial more complete; eye backgrounds negative. Operation the following day.

Findings: Operation by way of the radical mastoid. Large pneumatic mastoid full of pus everywhere. The posterior wall was intact. The attic wall was entirely destroyed by the gunshot wound; the tegmen tympani was destroyed the size of a twenty-five cent piece; brain tissue protruding from the torn dura, and the whole was bulging into the middle ear. The radical mastoid was completed in every detail before I began to search for the bullet. The route of entrance of the bullet was followed within the temporosphenoidal lobe to the depth of one and one-half inches when an abscess cavity was encountered that contained the bullet. The bullet was removed, the cavity was cleaned with sterile gauze and packed with iodoform gauze; mastoid dressing completed; wound left open.

Following day temperature normal, patient quite comfortable. The second day following operation the first dressing was made; as the gauze was removed from the abscess cavity, could observe same. The cavity looked healthy in every detail, besides the edema of the brain that was present prior to operation had entirely subsided and I said at the time that the patient would recover. All operations on the brain for abscess, where the abscess has been found and not followed by edema and protrusion of the brain itself, have recovered; while a small percentage of the cases recover when the brain becomes edematous and protrudes through the incision of the dura. This is a very valuable point and one worth remembering for prognostic purposes.

The patient continued to improve and was finally discharged well.

The reason for reporting these two cases is to call attention to the route the surgeon should pursue in gunshot wounds of the ear. In the first case the bullet could not have been removed in any other way. In the second case the operation of entering the brain and removing the bone was

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

largely done by the entering missile. Entering the middle fossa by this route, you are well under the temporosphenoidal lobe, drainage is at the best possible point and the brain has not to be subjected to the additional traumatism.

In conclusion I wish to emphasize that in all gunshot wounds of the ear where operation is indicated, the one of selection should be by the radical ear operation.

Discussion.

Dr. Robert Miller, Los Angeles: I am sorry I did not hear all of Dr. Welty's paper. Some years ago I saw, in consultation, a man about thirty-five years of age, who, several days previously, shot himself with suicidal intent. The weapon used was a cheap one of 44-calibre. Upon calling later at the police station, I learned that a "short" cartridge had been used. The missile had entered the external auditory meatus on the right side. The wound was full of pus, and paralysis of the right side of the face was complete. The pulse was about eighty, and very feeble, and patient very pale and weak. He declined operative interference. I saw him but once. Contrary to expectations, he recovered sufficiently to stand trial for attempting to murder two women, whose hands he had vainly sought in marriage, the attempt upon their lives having been made immediately prior to that upon his own.

He was convicted and sentenced to the penitentiary for two years. I very much regret not having sufficient data to be able to make a more complete report of this case. The chief point of interest is that with such a wound, a partial recovery was possible.

REPORT OF AN UNUSUAL CASE OF LABYRINTHINE DEAFNESS.*

By G. P. WINTERMUTE, M. D., San Francisco.

Name, Mrs. M. W. Nativity, U. S. A. Age, 42. occupation, housewife. Referred from the Medical Clinic with the following history:

Family History: Mother died at 61 years of heart trouble; had always been very nervous; eyes had been operated on leaving her blind. Father died at 71 years, pneumonia. One sister alive and well, no brothers. Some relatives died of T. B.

Present History: Childhood. Patient had measles, whooping cough, chicken pox, no jaundice, rheumatic fever (?)—in general a strong child. Later life. No jaundice, malaria in Stockton 20 years ago, did not have a doctor, questionable. Eyes, negative. Nose, catarrh intermittent beginning about 18 years. Ears, about 15 years ago had an abscess in left ear, treated by a doctor. That went away and since then to present time has had no trouble with ears, except after dizzy spells, which left a numb feeling for a few minutes.

Head: Dizzy spells started at about 14 years, came at irregular intervals—sometimes four a week, and sometimes only one in several weeks. Spells may come when walking, sitting or even in the middle of the night. There is a feeling of closeness, a rushing of blood to the head, together with a vomiting, without a feeling of sickness; dizziness. As soon as gas is brought up and patient walks about a little, there is relief—attack lasts about five minutes—very weak after attack.

Throat: At time of abscess in ear, patient had a (quinzy) sore throat. Respiratory system, negative. Circulatory system: At time of attacks patient describes a darkening about lower part of face; no piles; no palpitations. Digestive system: No constipation; at time of spells there seems to be a retching of stomach bringing up gas and sometimes stomach contents brought up; no feeling of sickness. Has had a hernia and has been operated on; possibly a ruptured appendix with much pus. Urinary system: Negative; urine gets dark at times. Menstrual history: Started at 14 years, normal. Dizzy spells apt to come either just before or after period.

Married Life: Had a child at 24 years; child well; patient well since. Married at 35 years; no miscarriages; husband alive and well; has two boys alive and well. Has had considerable nerve strain and general worry. Does not drink ale.

At 14 years of age patient started to have certain attacks which seemed to come either just before, during, or immediately after menstrual period. The attack is characterized by a feeling of light-headedness, which is associated with a buzzing or swishing in ears. Patient becomes very faint but does not become unconscious; she becomes dark in the lower part of the face; she seems to see things double with both eyes and after extreme retching of stomach—which is not associated with any pain—much gas is emitted, and after that and walking a little, patient feels immediate relief. After attack patient is left quite weak and the attack lasts only about five minutes.

Lately the patient has noticed that about an hour or so after an emotional strain, attack is apt to come on. Onset is always sudden and without apparent cause, though sometimes a quick movement or strained and sustained position seems to be a predisposing cause. (See note in ear, nose and throat history.)

September 23rd, at 10:30, while writing a letter—had been under emotional strain for several weeks and culminating point associated with writing of letter—typical attack set in, this time associated with vomiting due to retching without any feeling of sickness. Patient had eaten an unusualy hearty supper. For three days the vomiting continued at intervals and dizziness also remained. Patient remained in bed four days; no fever; lips dry; tongue coated white; took citrate of magnesia. Patient too weak to get up. A deafness of right ear (partial) has remained until present time; now patient cannot walk straight and has a kind of fullness at base of brain and a feeling of constriction about entire head; no pain; no soreness of eyeballs.

Present Examination (Dickson). Patient well developed, fairly well nourished. Face flushed and cyanotic. Pulse 80, regular. Temp. 98° • (9:30 a. m.). Pupils equal, react readily, fields (rough test) apparently not restricted, evident moderate anemia (sclerae pearly white). Eye movements O. K. Tongue large, coated. Teeth well kept, pharynx congested. No enlargement, thyroid or cervical lymph nodes. Chest movements equal, not very wide excursion. Vocal fremitus greater on right side. Percussion shows no impairment. Auscultation shows harsh breath sounds with few moist rales over both apices after coughing, and over both bases behind.

Heart not enlarged. Sounds at apex show definite presystolic murmur, with sharp first sound, also slight systolic at aorta transmitted to the neck; occasional premature contraction noted. Liver not enlarged or tender. Spleen not felt. Abdomen loose, scars of old operation, wound in median line; and drainage puncture wound below umbilicus, and behind, on left side. Marked tenderness on pressure over McBurney's point. No other tender foci found.

Legs and ankles slightly swollen. Knee kicks, active and equal. Patient not examined as to neurological condition. Evident diagnosis is mitral stenosis, slight decompensation. Given infusion digitalis, drachm 1—three times a day. To keep as quiet as possible.

October 7. Patient returned. Still has sensation in head. Vision is still disturbed, when first goes into the light. Has not been coughing or short of

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

breath. Complains of cold feet, especially at night. Is irritable. Unable to keep up with conversation. Pulse 80, regular when sitting. Renew prescription. Give double amount. Give pil Rheii Co., one at night.

October 8. Admitted to Lane Hospital.

Status (Lovell Langstroth). Well developed, well nourished woman, lies comfortably in bed. Eyes, pupils equal and react to light and accommodation, fields and movements normal. Ears, does not hear watch on right, no discharge.

Chest, broad, deep, well arched and clothed. Expansion good and equal on both sides. No dulness. R. normal. Prolonged expiration at right apex, breath sounds otherwise normal, no rales, apices of good width, bases move freely.

Heart, P. M. T. palpable but not visible in fifth interspace, nine and one-half cm from midline. Apex in fifth interspace, ten and one-half cm from midline; upper border at third rib; right border four and one-half cm to right of midline. Heart very slightly enlarged, just palpable thrill at apex, where a well defined presystolic rumble is heard, followed by a snapping first sound. Sounds: clear pulmonic, second accentuated. Rhythm regular, rate moderate, radial pulse full—artery not palpable—tension normal.

Liver, dulness begins at sixth rib and extends to costal margin in nipple line. Spleen, not palpable.

Abdomen, rounded and slightly protuberant, but symmetrical; walls fat and toneless; laparotomy scar at umbilicus in midline. Scar from drainage tube in right lower quadrant, another above the left and superior spine; no spasm; slight tenderness in right lower quadrant above pubes, no masses. Right kidney floating and easily palpable.

Extremities, considerable thickening and roughening of periosteum over inner surface of both tibiae; no edema, varicose veins or scars. Considerable purplish marbling of skin of both arms—many dilated venules on both legs and thighs.

Reflexes, patellar jerks, hyperactive but equal.

Impression, mitral stenosis (Lovell Langstroth). (Lues?)

October 13, 1913. Note by Dr. Cheney. Physical signs indicate definitely the presence of a mitral stenosis; but this lesion is well compensated and does not seem adequate as an explanation for her attacks. In the absence of a Wassermann reaction it appears that these attacks are functional, resembling petit mal.

October 15. Dr. Schaller suggests Menieres disease as an explanation for deafness coming on suddenly and dizziness. To have eyes examined to explain diplopia. To have ears re-examined and written reports made.

October 16. Eyes: Vis. R. & L. equals 20-15. Fundi normal.

Examination of Ear Clinic. Patient states she was taken ill, with dizziness and vomiting ten days ago. Dizziness, from her description, was not exactly of the labyrinthine type. Since this attack she has been hard of hearing with tinnitus at times. Patient states that she is subject to attacks, and that during them she always becomes deaf, sometimes in one ear and sometimes in the other, but only lasting, before this last attack, a few minutes. The attacks are also characterized by a feeling of numbness in the ears.

R. Ear.	L. Ear.
	Weber—towards L.
Positive	—Rinne.
14" Short	—Schwabach.
Negative	—C.
Negative	—A.
Negative	—C4.
5 feet	—Voice.
2 feet	—Whisper.
Negative	—Watch.

Positive—Caloric positive, no dauern, nystagmus. T. L. 14"—Turning—T. L. 18".

Pointing tests all normal.

Sways to R. in Romberg; sways to R. in walking with both eyes closed—the swaying in both walk and Romberg is not constant in repeated tests. Knee jerks normal; unsteady in balancing on one foot. Spontaneous nystagmus on looking to extreme right and left. Patient states that quick movements of the head make her slightly dizzy. Tactile sensation over the distribution of 5th nerve good.

The discrepancy in Romberg and walking tests suggest a functional element present. She was carefully tested for malingering by reading with the noise apparatus, and by the use of two small "a" forks—tests showed she was not malingering.

Patient returned a few days later and apparently her hearing had improved—the voice distance increasing to twenty feet.

Referred neurological.

October 18. Dr. Schaller. As patient does not lose consciousness during attacks, petit mal seems improbable. In the absence of any demonstrable lesion of the labyrinth, Menieres disease seems equally improbable. From the neurological examination, no evidence of organic nervous disease can be elicited, with the exception of possible nerve deafness (?) which seems variable. Our impression, therefore, of the condition, if it be not accounted for by circulatory changes dependent on the heart condition, is a nervous, functional one, perhaps related to migrane, which it somewhat resembles, the principal and characteristic symptom, however, of headache, being absent.

October 20. Is it not characteristic of petit mal that unconsciousness does not accompany the attack? M. P. C.

October 21. Dismissed. Diagnosis. Mitral stenosis. Migrane.

October 27. Further ear examination: Walking with eyes closed has a tendency to fall to left. No headache, no pain on pressure. Tinnitus synchronous with pulse. No spontaneous pointing error. Normal pointing error after turning with palms downward. Hearing four yards. No nystagmus (spontaneous).

It is unlikely that this is a case of Barany's syndrome. Epilepsy is improbable on account of the length of time of attacks (four days or more). Mixed treatment.

October 28. Further ear examination: In testing the hearing, it was discovered that the patient was not holding her good ear tightly closed. On correction, hearing proved the same as in the first examination. The apparent improvement which had been previously noted was undoubtedly due to this error.

Further examination in March, 1914. Hearing tests all gave the same status as at the first examination. Irrigation with Ruttin's double sided caloric apparatus gave no nystagmus after four minutes' irrigation, showing that both vestibules were equally irritable.

Comment: We have here a patient subject to periodical attacks similar, at least, to petit mal; and characterized from the ear standpoint, by temporary deafness and tinnitus during the attack. It might be regarded as a functional disturbance of the hearing centers, had not one attack finally left the patient with a permanent nerve deafness in one ear.

The patient has a heart lesion, and the one attack which produced the damage, might be accounted for by a small embolus lodging in one of the branches of the arterial plexus which supplies the membranous cochlea, producing a permanent damage to the end organ. The theory of embolus, however, seems inadequate to cover the repeated attacks with temporary deafness and tinnitus. It would be a great coincidence for a patient suffering from repeated functional disturbances of the ear centers, to have an embolus finally lodge in the blood supply of her inner ear. By the same

reasoning a hemorrhage into the cochlea seems equally improbable.

Barany's syndrome complex is characterized by attacks of dizziness, labyrinth symptoms, and an inner ear lesion. Headache on the affected side behind the ear is a constant symptom. The pointing tests show a deviation, and often pointing after turning shows a loss of deviation to the inside of the hand on the affected side. The vestibule on the affected side usually is less irritable, and the hearing is often variable.

This case has no headache, no pointing deviations, the hearing is not variable, and the vestibules are equally irritable. It consequently does not fall within the group of cases which Barany has described as due to increased pressure of fluid in the posterior fossa.

In the December 1913 issue of the Archiv fur Ohren heilkunde, a report of the Deutcher Naturforscher und Arzte in Vienna quotes Beck as reporting a case of eighth nerve palalysis in multiple sclerosis, and Gemperz reports a case of multiple sclerosis in which the first symptoms were peculiar, recurring apoplectiform labyrinthine symptoms affecting one ear only. The report of these cases was so brief that it was impossible to determine whether they were similar to this case. The Neurological Clinic was unable to find any lesion in the central nervous system—possibly something may develop later.

In such a search as I have been able to make I can find no similar case, and I report it without attempting any explanation.

Discussion.

Dr. Cullen F. Welty: All I can say for this case report is that the case is worked up remarkably well. It shows how much can be done in arriving at something definite in regard to some of the ear lesions we frequently encounter. From the fact that nystagmus was not associated with the vertigo and dizziness, I am led to believe that the vertigo did not come from the internal ear but was due to an affection from which the patient suffered. I would account for the deafness by an infection of the cochlea from influenza, measles, mumps, or some one of the infectious diseases. To my notion this is more likely than the interpretation he puts upon it.

John J. Kyle, Los Angeles: Dr. Wintermute's report suggests to me the possibility that his case is one that might be classed as hysterical labyrinthitis. The fact that a nerve deafness exists, which is a real one, does not rule out the possibility that the periodical static changes are purely functional and hysterical in character. I have one case under observation, with a history of partial nerve deafness, suffering from periodical attacks of dizziness, and vomiting, upon sudden change of position, symptom complex of some vascular change in the semicircular canals, in which the symptoms of hysteria are positive. In this case there was a history of a fall and a blow on the head in the frontal region, in which there might have been a serious effusion into the labyrinth. Before the fall, however, sudden change of position would cause dizziness and sickness. Examination by a competent neurologist gave a negative finding, and X-ray examination shows no change in floor of skull.

Dr. Hill Hastings, Los Angeles: I reported at the last meeting of the State Society, several similar cases of so-called Meniere's disease, without any middle-ear changes. Similar cases were reported by Richard Lake in the British Medical Journal. The circulatory changes that likely do occur in the labyrinth are usually not susceptible of diagnosis.

Dr. Wintermute, in closing: Hysteria was first thought of, but the malingering tests showed actual deafness, and the last examination, five months afterwards, showing exactly the same status in the functional tests, led him to believe that it was not hysteria. He was acquainted with the cases reported by Dr. Hastings and Dr. Lake, but they did not seem to him to be of the same type.

BOOK REVIEWS

Electricity in Diseases of the Eye, Ear, Nose and Throat. With illustrations. By W. Franklin Coleman, M. D., M. R. C. S. Published by the Courier-Herald Press, Lincoln, Ill., 1912. Price $5.00.

This work for believers in electrical treatment of pathological conditions will no doubt be well received. It will be admitted by all scientific ear, nose and throat specialists that electricity, except in a few isolated instances, has no place in treatment. This volume would lead one to believe that it is a panacea for almost every ill. In this respect it is absolutely dangerous, for no sane man would use it as advised in chronic, purulent otitis media, glaucoma or cataract. To be brief, the book is a hodge-podge of non-scientific, unproven facts with a few grains of truth sprinkled in. The faddist will find plenty of pabulum in this work.

H. Y. McN.

Bacteriology For Nurses. By Isabel McIsaac, R. N. Second Edition Revised. Pp. 176, with illustrations. New York. Macmillan Company, 1914. Price $1.25.

For both the student as well as the graduate nurse this book furnishes a comprehensive and instructive treatise on the subject of bacteriology. While it may be used in connection with instruction in the laboratory, yet, the subject is so treated that it may be readily used for reference purposes. The subjects treated cover the general field of bacteriology, giving an idea of the relations of bacteria to disease, the methods of examining and detecting their presence, as well as sterilization, disinfection and immunity. The tables and formulae are well selected; the illustrations when supplemented by work with the microscope suggest lines of further study. As a text book it would be of assistance to a nurse desiring to inform herself generally upon the subject of modern bacteriology.

G. L. B.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M. D., Professor of Otology in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. 12mo of 590 pages, 223 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $2.50 net.

The book impresses the reader as being concise, correct and sufficiently complete for the student or busy practitioner. There has been considerable elimination of non-essentials but the process has not been carried to the extent of omitting such obsolete methods as tonsil electrocautery, piecemeal tonsillotomy and through and through septum operations. The added chapter on formulas contains valuable hints on medical therapeutics and the subject of the accessory sinuses is given the increased prominence its importance demands. The section on the ear is especially worthy of praise. It contains numerous excellent and helpful engravings of dissections by the author, and is up-to-date with the latest advances in

the study of the labyrinth and in the pathology and surgery of the intracranial complications of Otic diseases. Dr. Gleason is to be congratulated on the possession of the happy faculty of presenting facts in a literary style that is at once entertaining, lucid and rememberable. G. W. C.

Nervous and Mental Diseases. By Joseph Darvin Nagel, M. D., Consulting Physician to the French Hospital of New York, Member New York Academy of Medicine, Honorary Member Societe Royal de Belique, etc., Physician to St. Chrysostom's Dispensary. New (2nd) edition, revised and enlarged, 12mo, 293 pages, with 50 engravings and a colored plate. Cloth, $1.00 net. (The Medical Epitome Series.) Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This book of 282 pages is divided into five parts: Part I, Diseases of the Peripheral Nervous System; Part II, Diseases of the Spinal Cord; Part III, Diseases of the Medulla Oblongata; Part IV, Diseases of the Cerebrum and Cerebral Membranes; Part V, Diseases of the Mind.

It is stated in the preface that one of the chief aims of this small volume is to enable the student to make a quick review of the principal nervous and mental affections. At the end of each chapter follows a selected list of State examination questions. The discussion of each disease is necessarily brief and the book is not intended to supplant the larger and more complete text books on the subject. W. F. S.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited By FRED I. LACKENBACH.

NOVOCAINE (N. N. R.)

Novocaine is a synthetic chemical—the hydrochlorid of p. aminobenzolyldiethylaminoethanol. It crystallizes from alcohol in colorless needles possessing a melting point of 156° C. It can be heated without decomposition to 120° C. It dissolves in equal parts of cold water, the solution possessing a neutral reaction. In alcohol it dissolves in the proportion of 1:30. Caustic alkalies and their carbonates precipitate the free base from the aqueous solution in the form of a colorless oil which soon solidifies to a crystalline mass, but solution of sodium bicarbonate is miscible with solutions of novocaine without producing either precipitation or turbidity. The aqueous solution of the salt may be heated to boiling without decomposition and remains perfectly clear when kept for days in loosely-stoppered vials. It gives precipitates even in very dilute solutions with the usual alkaloidal reagents—such as potassium mercuric-iodide, picric acid, potassium iodide, etc. It is incompatible with alkalies and their carbonates and the alkaloidal reagents.

Novocaine is a local anesthetic similar in action to cocaine but much less toxic than cocaine, and said to be less toxic than other cocaine substitutes. When injected subcutaneously it is said to exert a prompt and powerful anesthetic action, but the effect is not sustained. This may be remedied by the simultaneous injection of the suprarenal alkaloid. Novocaine is apparently devoid of irritant properties. It is said to be useful in all cases in which cocaine is indicated. Novocaine does not come within the scope of the recently-enacted Harrison Act.

Novocaine appears on the market in the forms of base, the hydrochlorid, and the nitrate. Also in compressed tablets for the convenient preparation of solutions of various strengths, and in combination with epinephrine.

Novocaine base occurs in powder form and is soluble in oils. It is used in the preparation of oily solutions for nose and throat application—generally in a ten per cent. solution.

Novocaine nitrate is preferred where employed in combination with silver salts—with which it forms no precipitate—as in urethral irrigations, etc. The three per cent. solution is most commonly employed.

Novocaine hydrochlorid is used for the preparation of aqueous solutions which may be sterilized by boiling without decomposition or loss of activity. When epinephrine is added solutions should not be exposed to continued boiling since the active principle of the adrenals loses in activity by continued boiling.

For infiltration anesthesia: solutions of one-fourth to one-half of one per cent. are employed—prepared by dissolving 0.250 to 0.500 gm. novocaine in 100 cc. physiologic salt solution. To this may be added five to ten drops epinephrine solution (1:1000). The one-fourth of one per cent. solution, it is said, suffices to completely anesthetize the thick nerve trunks—as the sciatic nerve, in about ten minutes.

Solutions varying from one-half of one per cent. to two and a half per cent. are employed for local anesthesia—by injecting around the field of operation and by interrupting the conductivity of the nerve trunks which innervate the field of operation.

For lumbar anesthesia: from 2 to 3 cc. of a five per cent. (or from 1.25 to 1.8 cc. of a ten per cent.) solution may be employed—with the addition of five drops epinephrine (1:1000) solution to 3 cc. of the 5%, or 2 cc. of the 10% solution.

For instillations and injection solutions: one-half of one per cent. to two per cent. solutions may be employed—with or without epinephrine. Quantities up to 100 cc. of the weaker solution, it is said, may be safely employed.

In ophthalmology: one to five to ten per cent. solutions are employed—no dilation of the pupil resulting. The novocaine is dissolved in physiological salt solution to which may be added 6 to 8 drops epinephrine solution (1:1000) to each 10 cc.

In Rhino-Laryngology. for anesthetizing mucous membranes five to ten per cent.; and for the larynx and pharynx, ten to twenty per cent. solutions are recommended.

For internal use: novocaine, owing to its feeble toxicity, may be given in doses up to 0.5 gm. (7½ grains) to adults.

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SOCIETY REPORTS

LOS ANGELES COUNTY MEDICAL ASSOCIATION.

Annual report for the fiscal year ending December 17, 1914.

To the Members of the Los Angeles County Medical Association:

Your Secretary-Treasurer begs leave to submit the following report for the forty-fourth year of the Association, ending December 17, 1914.

Part 1.—Report of the Treasurer—Financial Report.

The financial report of the Association for the period, December 18, 1913, to December 17, 1914 (with canceled checks, the check stubs, the receipted bills and the ledgers, for the inspection of the auditing committee), is as follows:

A. Maintenance Income for 1914.

Total amount of 1914 dues received in 1914 was		$ 9,763.50
This income is divided as follows:		
635 Members at $15.00	$9,525.00	
21 Members at $7.50 (These were new members who entered after July 1st.)	157.50	
5 Members at $16.00 (One Dollar Penalty for Delinquent Payments)	80.00	
1 Member at $1.00 (This member from another county society; at the difference in amount of dues.)	1.00	
Total	$9,763.50	
Balance carried over from 1913 was		935.33
Grand total all income during 1914 was		$10,698.83

B. Maintenance Expenses of 1914.

1. Paid Assessments to State Society ($6.00 per member)		$ 3,984.00
2. Envelopes and Postage		232.30
3. Printing Bills (some unpaid bills still outstanding)		393.25
4. Hall Rent		110.00
5. Refreshments at Regular Meetings		337.50
6. Clerical Expenses		646.05
7. Branch Refunders for Branch Expenses, and Refunders to Out-of-town Members		750.00
8. Miscellaneous (Stereopticons, etc.)		79.97
9. Telephone Exchange		2,933.39
10. Prescription Blank Outfits (leather cases and pads)		1,114.41
11. "Thank You" Rubber Stamps		75.42
Grand total all expenditures during 1914		$10,656.29

Summary.

Grand total all income during 1914	$10,698.83
Grand total all expenditures during 1914	10,656.29
Balance on hand on December 17, 1914, was	$42.54

From the above it is seen, that with the institution of the telephone exchange and the larger State Society assessments, that the current income just about carries the Society through its fiscal year, and even then, only by being careful in expenditures.

GENERAL REPORT ON THE STATE OF THE ASSOCIATION.

1. Membership. The year 1914, like its predecessors, shows an increase in the number of members, and we trust was marked also by a corresponding amount of increased efficiency in the organization.

During the year, a total of 73 new members were elected; there has been one resignation; and a total of 8 members have been called to the great beyond. There were also six members dropped for non-payment of dues.

At the date of this report, we have on the mailing roll of the Society a total of 668 physicians and surgeons who are resident in Los Angeles County.

It is gratifying to note, that without any special effort to bring into our midst physicians who have come recently into our community, that these men of themselves learn of the advantages of our organization, and seek membership.

It may be again stated, that for the amount of money which each of us pay into our County Society treasury, that none of us can show membership in any kind of a social or professional organization that gives us anything like the same social and professional returns, and certainly nothing like the same amount of material returns for the money which we actually pay in.

Following past custom, there will be mailed in January an application blank to every member of the association; and members are requested to place these in the hands, if possible, of members of the profession who have not yet affiliated themselves with us.

The policy of the Society as regards membership may be stated in simple language as one in which every honest and ethical practitioner of medicine and surgery is cordially invited to affiliate himself with the Los Angeles County Medical Association, to the end of his own betterment, through professional intercourse with other ethical colleagues; and for the better attainment of all those standards which work for the improvement and development of the profession of the healing art as a whole.

2. Programs. The scientific programs have been, we believe, of interest and value. Certainly the splendid attendance at these meetings might be taken as a warrant on the part of the members of appreciation of the work of those colleagues who have given their services as essayists.

Owing to a series of circumstances, the clinical meetings have been crowded out recently, but in the future spring months, we hope to inaugurate these in regular form.

Members of the association are again reminded that the scientific programs are open to all members of the association, and a request is made for papers, presentation of cases or specimens. The only limitation surrounding the securing of a place on the program, is this, that according to the number of requests for places on the program which are on hand, the time given to the various essayists shall be accordingly limited.

The secretary, as chairman of the program committee, wishes to thank those members who have co-operated so cordially during the last year in helping make the scientific meetings a success; and to again remind those who may not approve of the character of the papers, and so on, that all such members who would criticise are invited to write better papers, or to get up symposia, and a place will be gladly given them.

In connection with the scientific programs, we must mention the refreshment features of the scientific meetings, which have had so large a part to do in enabling our members—and especially our newer members—to get into prompt and cordial relationship with their older colleagues in the community and Society.

These refreshments, like our other activities, cost money, but the splendid results obtained therefrom, make it impossible for us to contemplate their elimination; for to do so would mean to give a cold barrenness to the scientific meetings, which would not only lead to a poor attendance at such meetings, but to the production of a spirit of aloofness that could not be otherwise than a damper on the progress and *esprit de corps* of the association.

3. Branches. From all we can learn, our branches at Pasadena, Pomona, Santa Monica and Long Beach, and our Ear, Nose and Throat Section, have been doing efficient service for the members living within their own particular geographical or special domains.

It is gratifying to know that our Long Beach branch, the existence of which was somewhat imperiled last year, has again gotten itself in good shape, and is now doing active work.

The region around Monrovia is still unrepresented by a branch, but we hope this matter will be taken up by our members in that region during the coming year.

4. Malpractice Defense. Los Angeles County continues to be the source of greatest cost to the State Medical Society when it comes to defending members of the State Medical Society on malpractice charges.

As previously stated, this is no doubt due to the fact that in the southern part of the State, we have so large a proportion of faddists; and with the existence of schools of the healing art of low educational standards and intense commercial ambitions, the temptation of patients to file suits against reputable physicians and surgeons is made extra great.

The State Society has been very successful in its protection of our members in this work, however.

Members of the Society should especially remember to refrain from filing suits for fees until at least a year has elapsed from the date of last service. In this way, a counter malpractice suit cannot be entered by such a patient, since the right to file a malpractice suit lapses after one year. A counter suit filed against a member may mean an outlay of several hundreds of dollars to the State Society, and the publicity in the papers is bound to hurt any man's reputation; so that for these reasons, no member should ever file a suit for services, except in exceptional instances, until at least one year has elapsed from the date of last service.

5. Prosecution of Illegal Practitioners. Last year, it will be remembered, our Society spent over $1200 in the prosecution of illegal practitioners, but this year we have left this work to the California State Board of Medical Examiners, where it properly belongs.

6. County Medical Association Telephone Exchange. One of the most pleasing items to chronicle for the year 1914 is the demonstrated success of the Telephone Exchange, which our Society established just about a year ago (on November 20, 1913).

A summary of the figures showing the number of calls handled by the Exchange in these intervening twelve months, should not be without interest to the members of the Society, since in one sense this was an experiment, the success of which is being watched by county medical societies throughout the United States.

Starting with the ten days in November, there were 31 calls, or practically what would have been 90 calls for the month of November, had the same been in operation.

For the 1st month, or December, there were 285 calls.

For the 2nd month, or January, there were 459 calls.

For the 3rd month, or January, there were 614 calls.

For the 4th month, or March, there were 911 calls.

For the 5th month, or April, there were 1118 calls.

For the 6th month, or May, there were 1262 calls.

For the 7th month, or June, there were 1415 calls.

For the 8th month, or July, there were 1567 calls.

For the 9th month, or August, there were 1675 calls.

For the 10th month, or September, there were 1787 calls.

For the 11th month, or October, there were 2407 calls.

For the 12th month, or November, there were 2619 calls.

This makes a grand total of 16,150 calls handled by this Exchange during the last year.

The fact that there has been a steady, regular increase in the number of calls within this time period, shows to what extent this Exchange is making a place for itself to the members of this Society and to the clients of the members.

When it is remembered that every call that comes in is duly charted and made a record of, it can be readily understood how valuable this Exchange can be.

The operators have instructions to get a physician who is called for over this Exchange, no matter at what effort required; and in most instances where anything like co-operation on the part of the physician is shown, their efforts are successful. This means a tremendous lot, not only to clients of this association, but to the members themselves; and especially so to many of the new men who come into this association, and who in the beginning have trouble in getting their names in the telephone directories, etc.

Of course, the great mass of these calls are day calls. There are four operators who have charge of the Exchange, one going on at 12 noon and working until 6 p. m.; another going on at 6 p. m. and working until midnight; a third going on at midnight and working until 6 a. m.; and the fourth going on at 6 a. m. and working until noon.

This arrangement is the only practical one with women operators, if the Society is to comply with the State eight-hour law.

The total number of calls during this last year received from 6 a. m. till noon were 4800; the total number received from noon till 6 p. m. were 7196; the total number received from 6 p. m. till midnight was 3787; and the total number received from midnight until 6 a. m. was 367, which altogether make a grand total of 16,150 calls, as previously noted.

In connection with this Telephone Exchange, there were sent out at the beginning of the year, prescription blank outfits to every member of the Society; and in addition there is printed in the 1914 city directory, under the head of "Physicians and Surgeons," a complete list of the Los Angeles city members of the Society; and in the classified portions of the directories of the two telephone companies, an announcement is made calling attention to the fact that these lists can be found on such and such a page in the Los Angeles City Directory.

For the first time in our forty-two years of existence, therefore, it is possible for lay persons who are seeking a physician affiliated with the ethical medical society of the county, to find a list of the members of this society.

When you remember what a large number of new citizens come into our midst every year, and how again and again these persons, who are virtually strangers, drift into the hands of mediocre or incompetent practitioners of the healing art, to whom in the East they would never think of going, we can appreciate after a moment's thought how greatly this telephone exchange is needed in Los Angeles.

We are conscious of the fact that a number of our members, through indifference or other causes, have thus far denied themselves the full benefits accruing from this excellent phase of our association work; but the testimony of those who have used the Exchange, and the fact that each month sees a larger number of the men in the Society using it, goes to show that it is filling a real need in an efficient manner. We prophesy better things than ever from it, and bespeak for this activity of our Society, the hearty co-operation of all our members.

A word of thanks is also due from the Society to the four young women who have labored so efficiently to enable the Exchange to do its work courteously, and to the satisfaction of both the members of the Society and of their clients.

7. Prescription Outfits. Did our financial means permit, an effort would again be made early in the year, to send out prescription blanks, the leather cases having been sent to the members last year.

The suggestion has been made by one of the members of our Association, that on the reverse side of the yellow carbon sheet could be printed a form blank for making notations concerning the illness of patients, so that as doctors made their rounds, it would be possible to jot down on the printed form those few essential notes concerning the patient's illness, which would have bearing on diagnosis and treatment. If such blanks are sent out during the coming year, an effort will be made to adopt this excellent suggestion.

8. Bulletin. Our bulletins have not been so voluminous as in some of the days gone by. Yet here, also, an effort has been made to keep the members in touch with the various activities of the Association.

9. In Conclusion. In conclusion, our Society continues as the largest medical unit in the State of California, and has fair prospects of becoming one of the very largest county medical societies in the United States.

Our organization in the last few years has been instrumental in launching many lines of activity that were almost in the class of experiments, but which in almost every instance have worked out in a very serviceable manner, and which have fully justified the money expended thereon.

Our efforts, therefore, as members should be to stand as in the past, close together, shoulder to shoulder, in every effort making for higher standards of the healing art, so far, at least, as our own group of members is concerned; and in working for all features of public health in which our organization, as a group of ethical practitioners, would have a natural and deep interest.

We are certain that, as in the past, our Association, founded almost a half century ago, will not be found wanting in any of these things.

Respectfully submitted,

GEORGE H. KRESS,

Secretary-Treasurer.

HUMBOLDT COUNTY.

At a regular meeting of the Humboldt County Medical Society, held January 5, 1915, the society rescinded its resolution of March 23, 1914, in regard to Industrial Accident Insurance work, and decided to accept and approve the recommendation of the House of Delegates of the State Society in this matter.

The officers elected for the year 1915 are: President, W. J. Quinn, Eureka; vice-president, F. R. Horel, Arcata; treasurer, L. P. Dorais, Eureka; secretary, Lloyd Bryan, Eureka.

With very best wishes for a prosperous New Year. LLOYD BRYAN Secretary.

PLACER COUNTY.

The regular annual meeting of the Placer County Medical Society was held in the Placer County Bank Building, East Auburn, Saturday, January 9th, Dr. G. H. Fay presiding in the chair. As no scientific program is presented at the annual meeting the proceedings consisted of routine business, the report of the Secretary-Treasurer, Dr. J. G. Mackay, and the election of officers for 1915.

The following officers and delegates were elected: President, H. T. Rooney, Colfax; vice-president, F. E. McCullough, Forest Hill; secretary-treasurer, Robert A. Peers, Colfax; delegate and alternate, G. H. Fay and J. G. Mackay, East Auburn.

The next meeting will be held in Colfax. Dr. F. L. Horne of Newcastle was elected to membership. ROBERT A. PEERS,
Secretary-Treasurer.

SAN FRANCISCO POLYCLINIC SOCIETY.

San Francisco, Feb. 1, 1915.

Cal. State Journal of Medicine, City.

Dear Sir:—Following are the proceedings of the San Francisco Polyclinic Society, which we will be pleased to have you publish in the next issue of the Journal:

San Francisco Polyclinic Society held its regular meeting January 21, 1915, at 8:30 p. m. in the Polyclinic Building, 1535 Jackson street. The following scientific program was heard:

1. Paper on "The Treatment of Infections," Dr. Sterling Bunnell. Discussed by Drs. Fischer, Montgomery, Ryfkogel, Banett and Stevens.

2. Paper on "Diagnosis of Ring-Shaped Eruptions," Dr. E. D. Chipman. Discussed by Dr. Montgomery.

3. Report of "An Unusual Case of Hernia, Following Laparotomy," and report of "Case of Dislocation of Wrist," Dr. Chester Teass. Discussed by Drs. Bunnell, McChesney and Banett.

4. Paper reporting "A Case of Epigastric Hernia," by Dr. Gilbert M. Banett. Discussion of the operation done, Dr. Ryfkogel. Discussed by Dr. P. K. Brown and G. Taubles.

HARRY P. ROBARTS, Sec'y.

SAN JOAQUIN COUNTY.

The San Joaquin County Medical Society met December 12 at the office of Secretary R. T. McGurk for its annual election, with the following members present: Drs. Hudson Smyth, R. R. Hammond, E. A. Arthur, H. C. Petersen, D. R. Powell, Mary Taylor, G. W. Walker, F. P. Clark, B. J. Powell, J. D. Young, C. F. English, J. D. Dameron, Linwood Dozier and R. T. McGurk.

After the minutes of the last meeting had been read and approved and the usual routine business transacted, the president called for the counting of the ballots. The count resulted in the election of the following members as directors for the year 1915: Drs. C. R. Harry, J. D. Dameron, B. J. Powell, D. R. Powell, W. W. Fitzgerald, Margaret Smyth, C. F. English, F. A. Arthur and R. T. McGurk. The officers elected were: President, Dr. R. T. McGurk; first vice-president, Dr. Margaret Smyth; second vice-president, Dr. F. W. McKibbon; secretary and treasurer, Dr. Dewey R. Powell. There was one delegate to the State society to be elected and Dr. J. D. Dameron was chosen, thus making the delegates from San Joaquin County for 1915 Drs. C. R. Harry, Margaret Smyth and J. D. Dameron.

R. T. McGURK, Secretary.

SHASTA COUNTY.

At a regular meeting of the Shasta County Medical Society, held January 30, 1915, Dr. B. F. Saylor, of Redding, was elected president and Dr. Earnest Dozier secretary and treasurer.

EARNEST DOZIER, Sec'y.-Treas.

SONOMA COUNTY.

Held at the offices of Dr. J. W. Scamell, Santa Rosa, January 7, 1915.

Despite a stormy night the following fifteen members were present: Drs. F. E. Sohler, F. O. Pryor, Jackson Temple, J. W. Cline, E. M. Yates, J. H. McLeod, J. W. Scamell, R. A. Forrest, G. W. Mallory, J. H. Shaw, Mabel A. Genung, J. C. Condit, J. R. Swisher, R. M. Bonar, J. H. Beard and W. E. Bixby.

The minutes of the December meeting were read and approved.

The application of Dr. R. H. Juell for membership in our society was voted on and the applicant duly elected.

The following resolution drawn up by the retiring president and secretary was read and approved:

"Whereas, God in His wisdom has seen fit to remove from our midst our fellow-member, Dr. J. W. Carico; therefore,

"Be it resolved, That the Sonoma County Medical Society extend to the relatives of the deceased its profound sympathy.

"Be it further resolved, That these resolutions be recorded in the minutes of this society and that a copy be forwarded to Mrs. Carico."

The following bills were approved and ordered paid: To Dr. Pryor, services secretary, Dec. '14, $3.00; to Herald Printing Co., printing, $3.00.

Dr. Jackson Temple next called the attention of the society to the appeal of the California Association for the Study and Prevention of Tuberculosis for financial assistance to enable them to make an instructive exhibit in the Palace of Education at the approaching Panama-Pacific Exposition. It was moved and carried that the society contribute the sum of $25.00 for this purpose.

This contribution brought to the mind of Dr. Forrest—and all of us—the pitiable state of the Belgian members of our profession who have lost all their belongings and the means of earning a livelihood on account of the present European war. Following the suggestion of Dr. Forrest it was moved by Dr. Yates, and carried, that our society contribute the sum of $50.00 to our Belgian fellow-practitioners to enable them to again become self-supporting, and that this sum be sent to Dr. Frank F. Simpson (7048 Jenkins Arcade Building, Pittsburgh, Pa.), who is already receiving sums from individuals and business concerns for this purpose.

Following the established custom our new president, Dr. Sohler, then read an interesting and instructive paper on "Some Interesting Cases," particularly appendicitis cases, where it was impossible to get the patient to the operating table inside the first forty-eight hours. The value of the Ochner treatment in such cases, the import-

ance of conservative drainage without immediate removal of the offending appendix if difficult to remove, and the idea of rectal drainage in cases presenting pus near the rectum were points emphasized. Finally the doctor demonstrated a specimen of an unusually large ovarian cyst for our modern surgical day, the most striking clinical feature of which had been its very rapid growth.

In the discussion that followed each member had an opportunity to narrate the interesting features of his unusual appendix cases—after which the meeting adjourned.

W. E. BIXLEY, Secretary.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

WASHOE COUNTY MEDICAL SOCIETY

Reno, Nevada.

Minutes of the Washoe County Medical Society. Meeting of February 2, 1915.

Dr. M. F. Boyd made application for membership and was accepted. Nine members were reported dropped for non-payment of dues. C. Shee Way, one of the three Chinese recently arrested for practicing without complying with the medical law, was reported to have agreed to leave the State in consideration of his bail bond of $500 being remitted. The charge against him was not dismissed. The prosecution of the remaining two Chinese will proceed in due time.

T. H. Brown, an advertising "Specialist" of the "blood disease and 606" type, was reported to have left town, and action in his case was ordered dropped.

General discussion of several proposed acts introduced in the Assembly followed. Mr. W. B. Alexander, secretary of the Mine Owners' Association, was present by invitation, and discussed the Industrial Act from the mine owners' standpoint.

It was decided to insist upon the proper authorities making full and careful investigation of all suspicious deaths.

W. L. SAMUELS, Sec'y.

A MISUNDERSTANDING.

To the State Journal of Medicine:

See in the December issue of the State Journal an article by Dr. John C. Spencer, entitled "Nothing New Under the Sun," in which he claims I have discovered something so old that he has forgotten the name of the technologist who originated it, I would like to justify myself before him and the readers of the Journal.

The following was printed in the Journal A. M. A. some months ago as paragraph No. 167, in the section of reviews of the current medical literature as published every month therein:

167. IMPROVED STAIN for TUBERCLE BACILLI—Mori regards the technic he describes as the best yet proposed, not only for its rapid action and reliability, but for the beauty of the results.

It is a modification of Ziehl's first method, differing by the formula of the fuchsin stain, and by the fact that all can be used cold, and that no sediment develops on standing. The carbol-fuchsin solution is made with 0.5 gm. fuchsin, 10 c.c. absolute alcohol, 2.5 gm. phenol and 100 c.c. distilled water.

The fuchsin is dissolved in the alcohol, the phenol is then added, and then the water is stirred in a little at a time, and the mixture is then set aside for twenty-four hours and then filtered. Differentiation is done with a 1% solution of sulphuric acid, and the contrast staining with a 1 to 4000 solution of methylene blue. Each fluid is applied in turn for ten or fifteen minutes, washing in water between.

In my article published in the California State Journal in November, 1914, under the head of "Staining Tubercle Bacillus," I made no claims to having discovered a new technic of staining the tubercle bacillus, but I simply claimed the modification of using a saturate solution of methylene blue for one minute for counter-staining instead of the 1 to 4000 solution of same as in Mori's method, the above modification being, of course,, in connection with the Mori method.

L. M. RYAN, M. D.

NEW MEMBERS.

Woodard, D. S., Watsonville.
Piersol, F. C., Mendocino.
Wolfe, Homer, Albion.
Horne, F. L., Newcastle, Cal.
Craig, John B., San Bernardino.
Osher, J. C., Anaheim.
Lewis, Elizabeth G., San Jose.
Freeman, Wm., Fullerton.
Bolinger, Hugh J., Stockton.
Desrosier, George, Maxwell.
Kucich, O. S., San Francisco.
Compton, C. S., Tulare.
Anderson, B. C., Barstow.
George, Wm. A., Loma Linda.
Whitmer, C. F., Colton.

RESIGNED.

Carolan, Herbert, San Francisco.

DEATHS.

Boggs, Walter De Witt, Pasadena.
Hill, Walter B., San Jose.
Lawton, Chas. W., Taft (died in Bakersfield).
Weir, Francis A., Pasadena.
Satterlee, F. P. (died in San Francisco).
Casselman, Delmar L., Los Angeles.
Russell, J. I. (died in Lakeview, Oregon).
Glass, J. H., Paso Robles.
Burleigh, G. W., Los Angeles.
Cavano, Wm. M., San Francisco.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII APRIL, 1915 No. 4

EDITORIAL NOTES

JUNE 21; A. M. A.; EXPOSITION.

Remember the time—the third week in June; the week beginning Monday, June 21st. On Monday the House of Delegates begins its work and on Tuesday the scientific sections begin their programs in the afternoon, the forenoon being given over to the general public session at which various addresses are made (the Governor and the Mayor have been invited to speak) and the President-Elect, who at that time becomes the President, makes his presidential address. This meeting will be held in the Columbia Theater, but all other meetings will be held in the Auditorium building at the Civic Center. For your own sake and the sake of your patients, do not, if you can possibly help it, fail to take advantage of the opportunity presented to you this year; it will never occur again. The sessions of the A. M. A. are always instructive and more than well worthwhile; you cannot fail to profit from them. And the Exposition in itself is a liberal education to anyone. There are a great number of exhibits that are extremely instructive to physicians, and in order to make it more easy for them to see these things that are directly in their line of activity, it is the intention of the Committee of Arrangements to get up a sort of catalog of such exhibits, giving their location in the various buildings. It has been the feeling on the part of a number of members of the Association that it is not wise to meet in an "exposition city." However, if all the members could spend a week or so studying the exhibits that are directly instructive to physicians, it would do them at least as much good as to listen to the various papers and discussions; though this may be held as heresy!

HOTEL RATES.

A rumor got started through the East, that the hotel rates in San Francisco had been raised beyond the limit of the roof and that everyone who came here would be surely robbed. This is most untrue. There are thousands of rooms, all in clean, new, safe buildings, all with running hot and cold water, steam heat, etc., and most of them with private bath, telephone, etc., that are to be had for from $2.00 to $3.50 a day. It is true that in the three or four more widely advertised and prominent hotels, the rates appear to have been slightly increased. It is more apparent than real, however, for the fact is that the managers of these hotels, wishing them to hold as many people as possible, have endeavored to make each room take care of two or more people and have based their rates on that principle. A room with bath at $7.00 a day for two people, is but $3.50 each person, and this is just about the same rate that is charged in hotels of the same class and character in all large cities like New York and Chicago. Our eastern friends must remember that this was always a city of hotels and apartment houses and that it is much more so since the fire. Also, that all of the present hotels are new; every one of them has been built within the last eight years and so the result is something unique—every hotel in the city is new, modern, clean and safe; most of them are class "A" (so-called "fire-proof") buildings. The restaurants have not recently increased their prices, though, as we all know, the cost of living has increased steadily in the last few years and San Francisco has not been favored in this respect above other cities. The larger and finer restaurants are, always have been, and always will be expensive places to eat in. But if one eats in a Palace or a Waldorf-Astoria he expects to pay well for it—though he generally gets what he pays for. There are any number of excellent restaurants where meals can be had for moderate prices, and that these are good is indicated by the way they are patronized by the residents of the city who know its ways and like good things to eat. There will be no Gouging!

DIPHTHERIA EPIDEMIC; WARNING.

The epidemic of diphtheria in San Francisco brought forth some distinctly good things. It was made the subject of a discussion before the County Medical Society, and the School Directors, Health Board, etc., were invited to and did attend and participate. The school people wanted to know whether the medical people would advise the closing of the schools in which a number of cases had occurred, and were quite emphatically told "No"! The reasons for the "No" are well set forth in the paper read by Dr. Sawyer of the State Hygienic Laboratory, whose address is remarkable for the amount of valuable material contained in such small compass. Incidentally, we should by no means forget the modest warning which Dr. Sawyer voices and should look forward to a steady increase in diphtheria and endeavor to find some way to clean up the dangerous "carriers." Also, it was pointed out by Dr. Topping

that in many sections of the city it was impossible to secure from the pharmacies which are supposed to have them on hand, the culture tubes and swabs supposedly supplied by the Board of Health; or when any were on hand, they were too old and nearly or quite dried up. The druggists explained that they had great difficulty in prying these tubes out of the Board of Health and could get them only in very small numbers and by sending for them repeatedly. This should by all means be corrected for one cannot minimize the possible danger of delay in some cases and of great inconvenience and annoyance in most. The medical profession will assuredly cooperate with the health board, but the latter must do its part and make the work as little irksome as may be. Look out for more diphtheria and more carriers.

OSTEOPATHIC "DOCTORS."

Of course, anyone who had studied the history of the art of treating the sick knew that the osteopath was merely a person who wanted to take some short and easy path to the golden goal of treating sick people and getting their money away from them. There are always such methods of side approach, under various names, for many people do not care how dishonest they are if they can get money by it and stay within the letter of the law. Therefore they want to be licensed to treat sick people by some new method—which means that when they get that special license, they assume to be "doctors" and the patient does not know the difference. The osteopaths and other drugless healers are doing the same thing and always have; only now they want still more—they want to have their "schools" allowed to issue the degree of doctor of medicine and they want their graduates to take the license of "physician and surgeon." Undoubtedly there are some able men who are osteopaths; but they are sadly few and they have really educated themselves in *medicine* and have more knowledge than the graduate of an osteopathic school possesses. Last year the Board of Medical Examiners examined and classified the various schools in the state, through a committee of the board, and placed upon its minutes the report of the committee. We find the following comment in relation to the Los Angeles College of Osteopathy:

"Entrance requirements: Very lax, the main desire seems to be to obtain as large as possible a number of fee paying students. Many of the students are men and women past middle life (35 and over; some over 60 years). Advanced standing is granted graduates of all osteopathic institutions. Dr. Shaw states that about a dozen such students come to them every year from other institutions and that from 30 to 40 yearly take postgraduate instruction. Drs. Shaw and Forbes stated repeatedly that their students (according to the law) do not have as much premedical education as do the physicians and surgeons. At the same time they insist upon their graduates being given unlimited or 'physician and surgeon' licenses. They absolutely decline to apply for 'drugless practitioner' licenses, although they claim that they teach pure osteopathy."

"Clinic and hospital departments: The majority of the rooms are dark and require artificial lighting."

"Eye department: . . . It is stated that this eye department is a separate corporation owned by Ring and Ruddy."

And so it goes on, from one phase of the "college" work to another, each revealing and accentuating the greed of the owners and the worthlessness, from the scientific or teaching point of view, of the whole enterprise. And they want the output of this money-making plant to be licensed physicians and surgeons, the same license that the graduate of Johns Hopkins receives after all his years of hard work! And they will get it, some day soon. Is it not more and more evident that the license to practice will mean nothing, after a while, and that membership in a recognized County Medical Society must take its place in our relative attitude toward the public—or rather, the public attitude toward the real physician and surgeon?

THE CANCER PROBLEM.

A special committee of the Pennsylvania State Medical Society has been working for some time on the problem of the reduction of cancer mortality. They have hit upon a rather novel plan to secure more intrest on the part of physicians and have made the suggestion that every medical journal in the country devote its July issue to the subject of cancer and to run large advertisements relating thereto. If some of our members will prepare articles on the subject of cancer, we will be glad to run them in the July issue and make further comment on the campaign to reduce the mortality from this cause. Their proposed advertisement is as follows, and we take pleasure in running it in advance—and in this place:

PHYSICIANS

Will You Help Reduce Cancer Mortality?

Seventy-five thousand people die from Cancer in the United States every year.

The public is gradually becoming alive to the "Cancer Menace" and will soon demand more active efforts from us.

Are you doing all you can to diminish Cancer Mortality among your patients?

You can help by:

1. Always being on the watch to make an early diagnosis.
2. By insisting on proper treatment WITHOUT DELAY.

REGISTER AND DIRECTORY.

The cold, bony hand of Fate seemed to have grasped and held for its very own, the last edition of the Register and Directory! Never were there so many changes and corrections to be made; never before did things seem to pile up just at the wrong time and cause delay after delay. The book which should have been issued last October or November, did not come from the press till the first week in March, and this in spite of everything that it was possible to do to hurry it along.

But at last it is out and a copy has been delivered or mailed to every member of the society. If some there be who were annoyed at the delay, will they please bear in mind the possible degree of annoyance to everyone in the State Society office—and forgive!

TO LICENSE CALIFORNIA GRADUATES WITHOUT EXAMINATION.

There is a bill before the present Legislature that looks so good at first glance, to the average citizen, that it seems likely to be well thought of by the legislators and to pass. It is a bill to license all graduates of legally chartered and reputable medical schools in California, to practice without an examination by the Board of Medical Examiners. Of course the osteopathic schools will be graduating "doctors of medicine" and of course they are legally chartered and, equally of course, they will howl mightily that they are most "reputable"—in spite of the minutes of the Board of Examiners!

VENARSEN.

This product, prepared by the H. M. Fletcher Co., Inc., Los Angeles, California, is being extensively exploited as an intravenous injection for the treatment of syphilis, pellagra, tuberculosis, anemia, etc. This product is described in this number of the Journal, in the Department of Pharmacy and Chemistry, p. 159. It is almost criminal for physicians to use a preparation of secret composition and to administer it by intravenous injection, a method which in itself is likely to give rise to accidents.

THE IMPUDENCE OF T. FLOYD BROWN, M. D.

Unfortunately he is really a graduate in medicine and licensed to practice in California. His name is T. Floyd Brown and at one time he was a member of the Los Angeles County Medical Association, but he was dropped from that organization for unethical conduct. He keeps up the same sort of conduct, but like most of his kind, is a plausible talker and writer and may deceive some of our less suspicious members. He is promoting a special "no-detention" secret treatment of his own, for the morphine-opium habit, and has sent circular letters to a great many, if not all, physicians in this state. He announces in one of his circulars that he has opened a San Francisco office (headquarters being in Los Angeles) and in letters states that he has secured the services of a physician in San Francisco to look after his business. The physician mentioned called at the JOURNAL office and stated emphatically that he would have none of T. Floyd Brown or his treatment or his methods. Quite a nice mess. Just remember something of the record of T. Floyd Brown, when his letters and circulars come to your office, and cast them into the waste basket.

OUR LAW DEPARTMENT.

Every activity of the Society is growing, and this includes the work of our legal department. The actual defense of alleged malpractice suits is only a part of the work; our attorneys do a great deal of work for the members, in smoothing things over, preventing suits, advising, and the like. We should appreciate this and co-operate with them. Our members should bring to our attorneys their law work outside of suits and threats for damages; such work as the preparation of wills, deeds, contracts, etc. Our attorneys are the best all-around attorneys that we can secure and they can attend to your private work as well as to your interests when you are threatened or sued by some disgruntled patient. That is, if they have the time. We now have first-class attorneys representing us in several centers and before long we will undoubtedly have a legal representative in nearly all of the larger places in the state. Do not think or feel as one physician did, who said to one of our attorneys: "I suppose you specialize on malpractice cases, and you would not attend to drawing my will"! This shows a sad lack of understanding of a lawyer's business, for he would not be a good lawyer to defend you in a malpractice suit if he were not a good lawyer in every way; with a sound knowledge of the law in general and a first-class understanding of procedure and general law practice. In a letter, one of our attorneys, discussing several matters of general interest to the Society, said: "The handling of malpractice cases is a losing proposition from a lawyer's standpoint, as commercial work is not as difficult work and pays him directly and indirectly very much more." It is evident that eventually the Society will be doing a great deal of law work for its members, but the members must come in closer touch with our attorneys and the relations between them must be more friendly and more personal and must not be confined to this one subject of malpractice matters.

MEDICAL DEFENSE DISCUSSION.

Two communications of importance have been received in answer to the request to our members to set forth their views on the subject of medical defense by the Society and the rules pertaining thereto. Dr. Kreutzmann brings out some very broad general principles which may well be carefully thought over and perchance acted upon in the future; there seems no reason why a stupid judge should not be made to know that we are aware of his stupidity or injustice; and such things do happen.

Dr. Juilly brings up a number of detail points and they are open for discussion. Does it work a hardship on any physician to require that he shall not sue to collect an account within one year without first putting his case and account before the Council? Many physicians do not approve of suing for accounts at all. Dr. Juilly is wrong in some of his assumptions. The majority of people who refuse to pay their accounts and threaten counter suits do not belong to the migratory class of hotel dwellers. And as a matter of business

sense, is it wise to pay out $500 to $1000 in order to collect fifty or a hundred? The doctor is correct in saying that the Medical Defense feature has built up and solidified the Society; over 90% of all assessments were paid before the first of March. The fundamental principle of the rules that have been made is, as stated, to protect the careful members against the burden which might be placed upon them by the careless or inconsiderate members. Insurance companies do not "take all our risks for a certain yearly premium"; they get out of every case they can if they can find the slightest technicality. Over and over again the State Society has taken care of a member who had insurance but the company said the case did not come within their policy provisions. The expenses for medical defense are not "for the benefit of a very limited number of our members" and in only two instances since we began the work in 1909, has a member twice called upon our legal department to defend him. Cases arising from "contract practice" and the like are to be, as ordered by the House of Delegates, considered by the Council and not defended by us unless the Council approves. The various rules have been made in order to do exactly what Dr. Juilly suggests should be done—"for equal charges, benefits should be equal to all"; in other words, to protect the careful against the inroads of the careless and the inconsiderate. In regard to the suggestion of publishing the details of suits, names of members, cost, etc., our attorneys very emphatically advise against it for a number of reasons. No man likes this sort of publicity. It is not good business policy to let the world in general know about your troubles and what they cost you. It is unfair to the man who is unfortunate enough to be the victim of such proceedings and of expense to the Society. Here follow the two letters mentioned:

To the Editor,
California State Journal of Medicine:

In the January 1915 issue of the JOURNAL we are informed that owing to the ever increasing number of suits for malpractice, the medical defense department of the State Association is compelled to make a few restrictions in their work, to wit: In fracture cases no aid will be given in a suit if defendant has neglected to take an X-ray picture; also aid is refused if defendant has brought action to collect a fee inside of a year after services were rendered.

This is well and good as far as it goes, but it is symptomatic treatment and does not strike at the root of the evil.

If the expenses for defending lawsuits of the members of the State Medical Association are to be kept inside a reasonable limit, a few fundamental things have to be done.

In my opinion, the most important of all is publicity—wide publicity, for all attempted, threatened, or actually acted suits for alleged malpractice of any members of the State Society.

I know physicians are averse to having their failures, ill successes, etc., published, notwithstanding the fact that such failures and ill successes are of daily occurrence. We hear only of wonderful cures and operations with uninterrupted recoveries, in papers and publications. But we all are having failures, we are all making errors of diagnosis, errors of judgment; only fools and ignoramuses are free from committing an error of judgment; we are, so to say, legally entitled to commit an error of judgment; what the law demands from us is the exercise of "ordinary care and skill of the profession," not the employment of the latest ephemeral fads in diagnosis or treatment, the employment of which is, unfortunately, by many considered as great care and skill.

Now, my friends, if you are really in earnest for the reduction of the number of lawsuits, and incidentally interested in an ethical uplift of the medical profession (alas, so urgently needed!), two things have to be done. The actions of a judge who sits in a court of justice, where a case of malpractice (or of collection of a medical fee) is brought, should be a matter of the closest attention and observation by the medical profession. We do not want any favors from the judiciary, but we demand a fair, impartial, fearless ruling and decision, and that is not always the case. All the judges are elected; we physicians and our friends represent a very respectable number of votes; if the judges know that their rulings and decisions are watched by the medical fraternity; that an unjust, unwarranted ruling or decision would be brought to the attention of the organized medical fraternity and made a means to campaign against their reelection—the judges would be very careful, and such manifestly unjust rulings and decisions as have been rendered in the past to the greatest detriment of honest, hard-working medical men, would become very rare.

Second, careful attention and wide publicity should be given to the testimony of medical "experts"; there is in 99 out of 100 cases some dirty, underhand work done in testifying for a plaintiff in a suit for alleged malpractice. No case can be brought into court unless the plaintiff can procure the testimony of a reputable practitioner to the effect that in handling the case defendant has not employed ordinary care and skill. It must be brought home to the profession that a physician who is willing to discuss testimony with a client or lawyer in order that a suit of malpractice against a confrere may be instituted, is a contemptible creature, not fit to mingle in decent medical society.

One can conscientiously say that almost all these suits for malpractice are attempts at extortion, blackmail suits, without any foundation in fact, without merit.

A physician who through his testimony aids and abets such a suit, a physician who expresses willingness to give testimony in such a suit; who through his willingness encourages the bringing of such a suit—that physician makes himself through his actions a party to a blackmailing crowd.

A committee should be created for the purpose of watching all legal actions against members, this committee to investigate and report to the committee on ethics. The committee on ethics should on

its own initiative, after careful investigations, institute proceedings for unethical conduct against any one so low as to become a party to a blackmailing suit. The actions of any physician who is found to have aided in such unethical despicable manner, should be widely made known throughout the medical profession by means of the medical press; the offender should without ceremony be ejected from the local County Society.

Just tackle one or two of these fellows in this way and the number of law suits for alleged malpractice—the curse of our profession—will materially decrease. It is not shielding incompetence or carelessness, but it is simply the duty of self protection to demand that a practitioner in medicine be considerate and careful in his judgment of the acts of a fellow practitioner.

Do we ever hear of law suits that have been threatened, instituted and acted before a judge? Are ever the acts of the judge criticized, the expert testimony analyzed? It is only a short time since a suit for alleged malpractice was brought and acted (and lost by the plaintiff) before a superior judge in this city; do we hear anything about it?

The committee on ethics should investigate this matter of greatest importance to the medical profession and should act without fear or prejudice—it will have the hearty support of all decent members of the County and State Society.

Something has to be done!

Sincerely yours,

Dr. Henry J. Kreutzmann.

To the Editor, California State Journal of Medicine:

I wish to make a few remarks on the subject of the Medical Defense of our State Society.

I first note that the restrictions imposed upon our members, before they can make use of this protection, are becoming more and more numerous, drastic and impracticable. When members are required to pay their dues in advance, this requirement is perfectly natural and just. But when members are required, as is done now, to wait a year before suing a refractory client, I believe this restriction works an unnecessary hardship on many of us.

The majority of the people who refuse to pay their doctors belong to that migratory class which lives in hotels and lodging houses, which constantly changes residence, and appears to be never settled anywhere. What chance has a physician to collect his fee from these people at the expiration of a year? None whatever. The redress our attorney offers us to consult him or the Secretary of the Society before bringing suit would compel these two gentlemen to read and answer a deluge of correspondence, stating facts and opinions on a thousand different cases. If his suggestion was to be put into practice, our attorney would no doubt be the first one to rescind his offer.

This dictum of our attorney can only have one aim; that of limiting as much as possible the number of malpractice suits instituted as cross complaint for the collection of money for services rendered. Now this limitation can only indicate that the defense fund of our Society is too small for the work to be done.

Our attorney's suggestion is then, without doubt, a measure of prudence; but allow me to say that, prudent or not, I believe it to be unjust for the majority of us. And this brings me to discuss the merits of our system of Medical Defense, as I see it.

We must admit, first of all, that the very principle of this defense is correct, since it allows a group of men to defend its individual members against malice and blackmail, without hardship for them, and at the same time, upholds the honor and dignity of our profession in general.

We must admit also that this defense is a good thing for our Society. Since it has been instituted, membership has no doubt augmented, dues have been paid promptly and in advance, and preclusions must have diminished in notable proportions. The members then, must have accepted this new branch of activity of their Society, as a profitable investment.

I am afraid, however, that the new restrictions imposed upon them in the exercise of their rights, and those that will no doubt be imposed later,—if they do not protest,—will finally drive our members back to the genuine and efficacious protection of private concerns which take all our risks for a certain yearly premium.

It would indeed be interesting for the general membership who pay equally for a certain legal protection, to know if they all receive their money's worth. I know very well that we all are liable to be sued for malpractice, and at a time we the least expect it. But, barring this possible restriction, I have a faint idea that our fund of medical defense is spent for the benefit of a very limited number of our members. It would be interesting to know the names of those who have already been defended, how often they have been defended, and how much money has been spent for their defense. Understand me well: I do not question here in the least, the absolute integrity of anyone connected directly or indirectly with our system of Medical Defense. I simply mean that some of our members are unfortunate enough to be made defendants to several suits; that our fund is exhausted to defend them, leaving our treasury empty to defend us.

I will explain. If we all had the same quantity of practice, among clients of the same social class, the chances of malpractice suits would be about equal among all of us. But the reality is very different.

It is evident that a surgeon, with an extensive practice, is much more liable to be sued than a practitioner who does no surgery at all. Yet both pay the same premium to our Society.

Again, some of our members who have accepted to work for some industrial accident insurance societies, and who give their services to such a great number of people,—a number so great in

fact, that, in the majority of cases, their care cannot possibly be conscientious,—do not these doctors threaten our fund of defense in a continual and not imaginary manner? And yet, these men pay no more than we do for their protection.

Would it not be fairer to have these men pay for their protection according to the risks they incur? If the rate of one or two dollars a year is considered sufficient to protect the great majority of our members, having a *really private* practice, let those who accept contract practice, or who belong to the staff of certain private hospitals pay us a premium appropriated to the increased risks they incur, or, better, let them be defended, in case of malpractice suit, by those who employ them.

If such was done, I believe it would become unnecessary to prevent members of our Society to wait a year,—that is to give our refractory clients time to disappear and make new victims,—before bringing them to justice to compel them to do their part of an honest contract.

I am more than ever a believer in mutuality; but, it seems to me that the very essence of mutuality is that for equal charges, benefits should be equal to all. Believe me,

Yours fraternally,

GEORGE H. JUILLY, M. D.,

133 Geary street.

AMERICAN

MEDICAL ASSOCIATION

Meets

SAN FRANCISCO

June 21, 22, 23, 24, 25, 1915

COME!

THE REDUCTION OF DIPHTHERIA MORBIDITY.*

WILBUR A. SAWYER, M. D., Director of the Hygienic Laboratory of the California State Board of Health.

The introduction of diphtheria antitoxin into general use in 1894 was followed in the next few years by a rapid decline in the mortality from this disease. The number of deaths from diphtheria decreased by from 50 to 75 per cent. The direct relation of this decrease to the use of antitoxin was shown by the coincident drop in the mortality in many different cities whose experiences with diphtheria were otherwise dissimilar.[1] With a curative agent so efficient as diphtheria antitoxin the number of deaths should have been reduced to a very small fraction of the total number of cases, but the rapid initial fall due to antitoxin has ceased. During the last decade the number of deaths has remained nearly at equilibrium, at about ten per cent. of the reported cases. A slight fall in this mortality as compared with the number of reported cases has occurred in recent years. It is, no doubt, largely due to a still greater use of antitoxin, and to a more complete reporting of the milder cases.

This statement of the present rather constant ratio of deaths to reported cases—approximately ten per cent.—is based on figures collected from various sources and presented in Charts I, II, and III.[2] In these charts the morbidity from diphtheria is shown on the basis of 1,000 of population, and the mortality on the basis of 10,000. Thus the number of deaths is ten per cent. of the number of cases when the curves coincide. The proximity of the mortality and morbidity curves for any one city shows how closely the deaths approach ten per cent. of the reported cases.

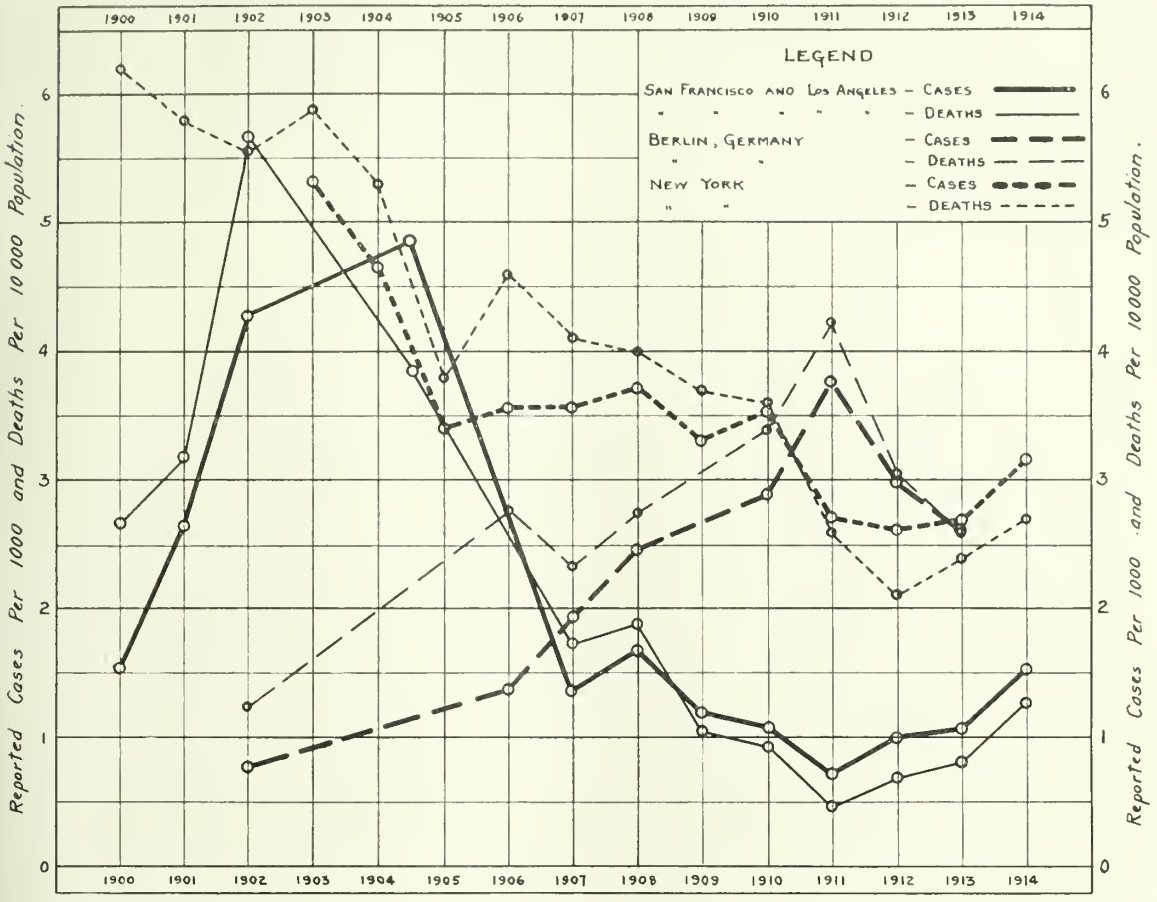
In Chart I are compared the morbidity and mortality from diphtheria in Berlin, New York, and California, the latter being represented by the combined statistics of San Francisco and Los Angeles. Enormous fluctuations in the number of deaths have occurred in opposite directions at the same time in countries using similar methods of treatment and control. By strange coincidence the height of Berlin's epidemic occurred in the same year as the lowest death rate in California. It is evident, when we consider large groups of people, that today the chief factor that determines the death rate is the number of cases, and that fluctuations are only in part attributable to present-day preventive measures. While antitoxin is capable of further reducing the relative mortality, its early and generous application is interfered with in many cases of diphtheria by ignorance, prejudice against scientific medicine, delayed or wrong diagnosis, or an exaggerated fear of anaphylaxis. These factors can be counteracted only slowly, through education and publicity. Sudden and marked lessening of the death rate through better treatment of the sick cannot hereafter be expected.

The mortality from diphtheria presents a very serious problem in America. From 1900 to 1912, inclusive, the number of deaths per annum from diphtheria and from typhoid fever in the Registra-

* Read before the San Francisco County Medical Society, February 9, 1915.

CHART I.

DIPTHERIA MORBIDITY AND MORTALITY FOR SAN FRANCISCO AND LOS ANGELES (COMBINED), BERLIN, AND NEW YORK.


1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914
LEGEND
San Francisco and Los Angeles – Cases
" " " " " – Deaths
Berlin, Germany – Cases
" " – Deaths
New York – Cases
" " – Deaths
Reported Cases Per 1000 and Deaths Per 10000 Population.
0 1 2 3 4 5 6

tion Area of the United States were nearly identical, the average yearly number of deaths per 10,000 population being 2.60 and 2.79 respectively.[3] The deaths from the two diseases decreased gradually together. Scarlet fever, whooping cough, and measles had mortalities of 1.03, 1.12, and 0.99 per 10,000, respectively, no two of them together having a mortality as great as that of diphtheria.

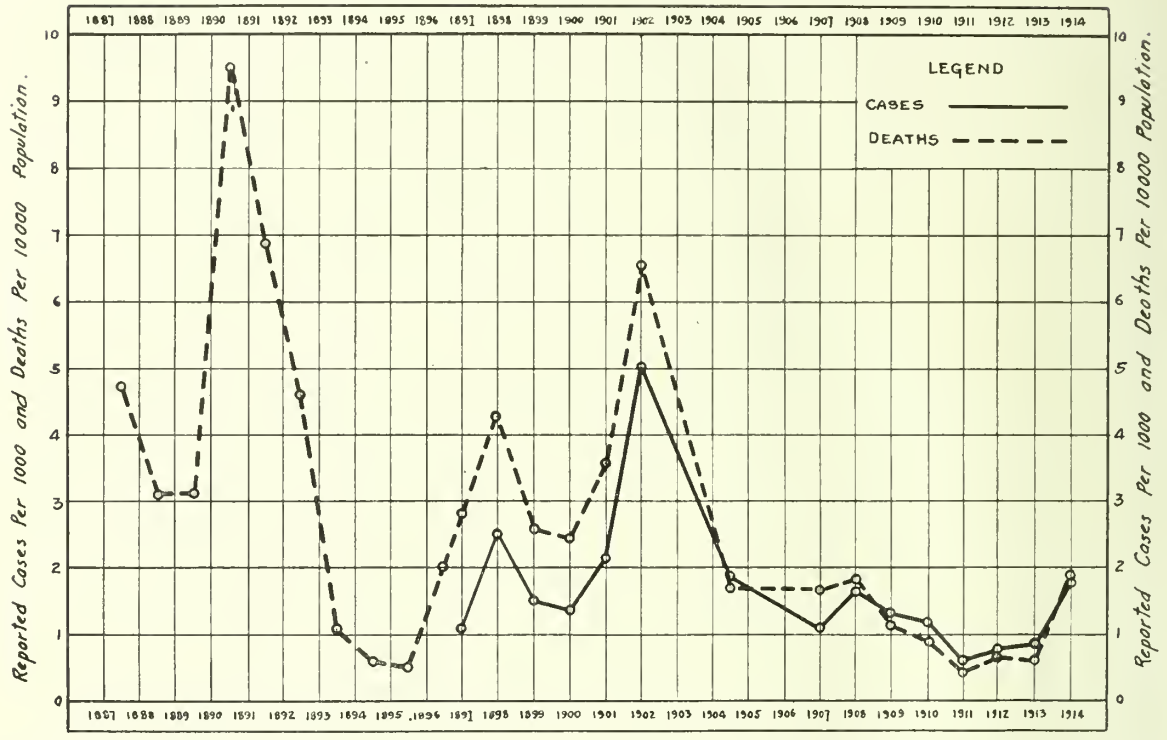
If the mortality from diphtheria varies directly with the number of cases, the most promising attack on the number of deaths will be by a supreme effort to reduce the morbidity.

It is very difficult to determine the real value of preventive measures because of the characteristic periodical fluctuations in the amount of diphtheria present in a country. Wherever the epidemiology of diphtheria has been studied it has been noticed that the disease comes in waves, widely spaced from 5 to 30 years apart. Our California experience, as represented by that of San Francisco, shown in Chart II, illustrates this periodicity. Unfortunately early statistics are not available, and Fourgeaud's description of the epidemic of 1856-1857 in California did not contain an estimate of the total mortality and morbidity.[4] In San Francisco we have had two epidemics spaced twelve years apart, and now, twelve years later, we are apparently facing another increase in diphtheria in company with the rest of California and with New York (see Chart I). We might attribute the rapid fall in the amount of diphtheria in California between 1902 and 1911 largely to preventive measures if the same measures had not permitted a rapid rise in Berlin at the same time, and if the great fluctuations of the San Francisco curve had not been quite independent of specific changes in our method of handling diphtheria. The causes of this periodicity may lie in changes in the infectivity and virulence of the organism, in the periodic immunization of the public during epidemics with a gradual running down of the immunity during the interval, the reintroduction of infection from other cities, or in other factors less well understood, but certainly our preventive measures are not yet sufficient to determine the shape of the curve. In Chart III the experience of our two largest cities and the state as a whole are shown to be almost identical, indicating that the important factors are common to widely separated parts of the state. It looks much as if we might expect a nation-wide increase in diphtheria during the next few years, and as if the present epidemic in San Francisco were but the first winter's installment. With this prospect before us, it is appropriate that we should examine critically the weapons which we use in fighting this disease.

The examination of diphtheria cultures for

CHART II.

DIPHTHERIA MORBIDITY AND MORTALITY FOR SAN FRANCISCO, CALIFORNIA.



diagnosis is performed free for physicians in our municipal and state laboratories. Cultures should be taken in much larger numbers than at present from mild and suspicious cases and contacts, so that the very dangerous ambulatory cases may come under control.

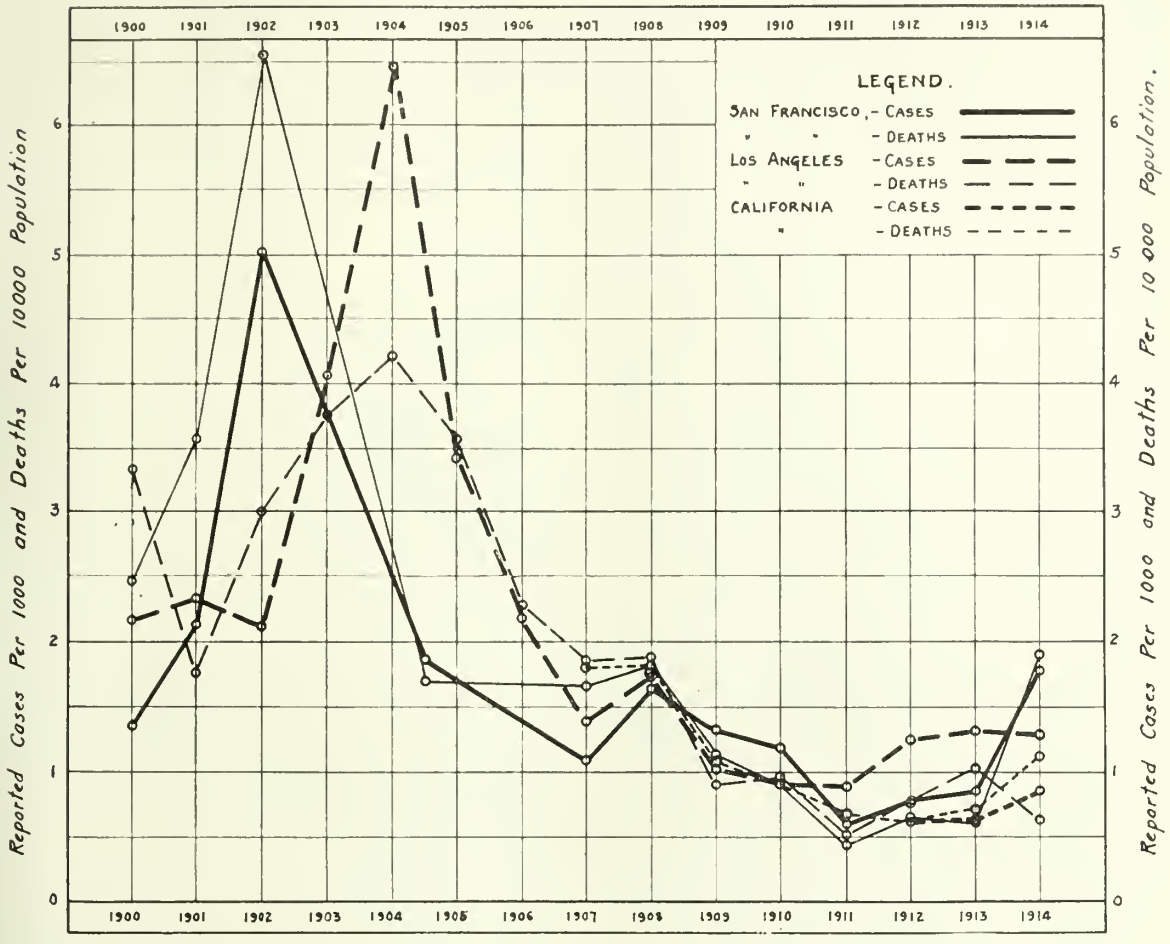
Quarantine as now generally practiced is helpful, but could be modified to make it much more efficient. Not infrequently we find a large family quarantined in crowded premises with the result that the members of the household infect each other repeatedly, producing some acute cases and more carriers. The number of carriers formed in this way may offset the advantage of the quarantine to the community. The emphasis should be put on the isolation and control of the individual patient or carrier, and greater liberty, subject to repeated negative cultures from nose and throat, should be given to other members of the household, including the wage-earner. More cultures would be taken and more cases discovered if the results of being detected as a mild case or a carrier were not so serious to the entire family unit. The notoriety that goes with a large yellow sign leads many to conceal disease. Just as the neglected pest-house in the country is giving way to the modern contagious disease hospital in the city, so the conspicuous quarantine of entire households will gradually be replaced by unobtrusive isolation of the patient with a limited liberty of the other members of the family under careful official control, based to a large extent on laboratory tests. As quarantine becomes less burdensome and more efficient there will be more expense and work for health departments, but many more persons will come under control. Contacts will gladly submit to cultures when the demonstration that their throats are free not only allows them liberty but also satisfies the fears of their employers and the persons with whom they come in contact.

Immunization with diphtheria antitoxin would not prevent many cases even if widely employed, because the passive immunity produced wears off rapidly and is difficult to demonstrate after twenty days. Physicians hesitate to use antitoxin on a large scale as a prophylactic owing to the danger of anaphylaxis in case an infection should occur a few weeks later and should necessitate therapeutic doses of the same serum. The most serious limitation in the use of antitoxin as a prophylactic remedy is that the passive immunity produced does not prevent the immunes from becoming carriers, endangering others, and perhaps developing the disease when the brief immunity wears off. Immunization, however, will become a much more efficient method of prophylaxis if the combined active and passive immunization of von Behring meets expectations and if the Schick test points out the individuals most in need of protection.

Just at present the question of fumigation in diphtheria is a frequent subject for heated argument. That routine fumigation on raising quarantine has little effect on the total number of cases is the present consensus of opinion among epidemiologists and is what we would expect from the knowledge that the greatest danger from diphtheria lies in persons, that is, recognized cases, missed cases, and carriers, rather than in things. The New York City Health Department has omitted fumigation after diphtheria in a large part of the city.[5] Statistical evidence will thus be obtained to show whether fumigation makes an ap-

CHART III.

DIPTHERIA MORBIDITY AND MORTALITY FOR SAN FRANCISCO, LOS ANGELES, AND CALIFORNIA.


1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914
LEGEND.
San Francisco, - Cases
" " - Deaths
Los Angeles - Cases
" " - Deaths
California - Cases
" - Deaths
Reported Cases Per 1000 and Deaths Per 10000 Population
Reported Cases Per 1000 and Deaths Per 10 000 Population.
0 1 2 3 4 5 6

preciable difference in the morbidity. The best we can do in the present state of our knowledge is to keep the patient's room and house in a safe condition, wherever possible, by special precautions regarding discharges, bedding, furniture, and utensils. When the case is terminated and the patient and all contacts give negative cultures there is little probability of the survival of diphtheria bacilli in dangerous numbers on objects in the house, as the bacilli usually succumb, in a few days, to drying. The official raising of quarantine should consist of a visit by an inspector who will determine in each instance the amount of disinfection necessary. In many cases which have been properly cared for no special disinfection need be required. In some a generous housecleaning would be ordered, with special attention to points of contact such as doorknobs, arms of chairs, bedding, and floors. In a few cases, especially those terminated at the height of the disease by death, a very thorough cleansing and renovating might be required, and, as a protection to those doing the work, a preliminary fumigation, controlled by bacteriological tests, could be ordered. In no event would it be necessary to fumigate schools or auditoriums. The danger there would lie in the seats and desks, the doorknobs, and other articles handled by children or adults. If these places are thoroughly cleaned daily by washing with soap and water, with or without an added disinfectant, the protection will be much greater than could possibly come from the much more expensive and annoying fumigation of these large rooms. Why should we waste money treating the ceiling and the upper parts of walls which, if they could by any possibility become infected, would retain the organisms, where they would die a lingering death far from the reach of fingers?

The biggest problem in the prevention of diphtheria is the large number of carriers and mild unrecognized cases, which outnumber the severe cases many times over. An epidemic consists essentially of a great increase of these distributers of diphtheria bacilli, with a resulting, though smaller, increase in the number of recognized cases. Measures for the reduction of diphtheria morbidity will meet success largely through the prevention and control of carriers. In the presence of an epidemic I would recommend to cities that they organize a group of trained men to make a special business of keeping schools and playgrounds free from diphtheria carriers. By adequate supervision the public school and the playground could be made the safest place for children in the city, because they would be the only places where a child could find playmates certified, on repeated

examination, to be free from diphtheria bacilli. The school is a convenient starting-point for detecting carriers, but when a positive case is found and isolated at home, the contacts in his neighborhood should be investigated. Carriers in a group could keep each other infected for a considerable period of time, while isolation would permit many to become free in a few weeks.

What to do with the carrier when found is a problem. Chronic carriers should be under less irksome restraint than acute cases, and a full quarantine of the premises should not be imposed unless made necessary by unusual circumstances. The restrictions should be laid down according to the danger of the individual to others. Some would need enforced isolation, while others, with simple precautions, could be permitted to work. The need is not so much the rigid control of a very small percentage of our carriers, as rational restrictions for the great majority. Needless to say, the ideal method would involve a great increase in expenditures for salaries and equipment for health departments.

Above all things it is necessary for health departments to have a working plan and to keep the medical profession and the public informed regarding their methods and the reasons for changes. Too often we find conflicting advice given by physicians and health officials who are earnestly trying to assist each other. A meeting in which the work of the health department is brought before the County Medical Society is invaluable for making the co-operation of physicians and health officials more efficient. The family physician is asked many questions regarding the prevalence of disease or the need for keeping children from school, and he should be kept informed as to the exact situation.

We would do well, at this time of increasing danger, to make a plan for a state-wide campaign against diphtheria. In making this plan let us profit from the experience of the past, accepting nothing on the basis of mere tradition. With a good working plan the cities of California, in cordial co-operation, can certainly prevent a repetition of the epidemics experienced in the past.

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HAEMATOGENOUS KIDNEY INFECTIONS.*

By GRANVILLE MACGOWAN, M. D., Los Angeles.

MODE OF INFECTION.

In all infectious diseases bacteria enter the blood and pass out through the kidneys. If they are few and are not especially virulent no infection takes place, but if they are abundant, attached to debris which has become separated from the purulent focus in which they have their origin and they are of virulent strain, and one or both kidneys is injured or diseased, and there is a concomitant obstruction to the free exit of urine from the kidney, either temporary or permanent, along the ureter or within its walls, or within the bladder or in the urethra, there will surely result a renal infection which may cause a severe and overwhelming toxemia and rapid death, or a slow infection with or without suppuration.

The required elements for the production of renal infections having a hemic source are the presence of pus-producing organisms and a lowered local resistance in one kidney. The first is supplied by a focus of infection always, the second by a traumatic injury to the kidney, the presence in it or its pelvis of a stone, the alteration of its tissues by a previous nephritis, stasis in its circulation due to displacement, hydronephrosis, pressure upon or stricture of the ureter, displacement or sagging of the walls of the bladder, stricture, or some other obstruction to the free exit of urine from the urethra.

The microorganisms circulating in the blood furnish the agent, the stasis of the urinary stream furnishes the opportunity, and the alterations of the kidney structure caused by disease or by trauma furnish the open door for the occasioning of the infection.

An infection of the kidney or the bladder may be esteemed as hemic in its origin when no evidence can be elicited that at any time an instrument has been introduced into the bladder or that a communication has been established between the intestine and the pelvis of the kidney or the bladder, by ulceration. It requires more than atony or paralysis of the vesical sphincters to produce an infection of the bladder mucosa. If it appears that a catheter or a cystoscope or a sound has been passed into the bladder without an accurate microscopic examination of the urine made beforehand to ascertain whether it was normal or infected urine, it may be very difficult to say with certainty whether the presence of pus-producing organisms in the urine is due to their entrance with the instrument or to their output from the general circulation.

Animal experiments and clinical experience all go to indicate that ascending infections from the bladder are very rare and difficult to produce, and often in those cases in which the ascending infection would seem to be most plausible, careful post-

* Read at the Forty-fourth Annual Meeting of the Medical Society, State of California, Santa Barbara, April, 1914.

mortem examination will show that even in the presence of atony of the ureteral muscles within the wall of the bladder, that while a pyelitis or a pyelonephritis exists the inflammatory process has progressed only a portion of the way up the ureter, showing very conclusively that the infective agent was carried either through the lymph channels along the ureter, or had been swept directly into the blood stream and deposited in the kidney itself.

Debris-bearing microorganisms usually find a lodgment in the glomeruli which accounts very well for the frequency of abscesses near the surface of the kidney in hemic infections. These minute abscesses enlarge and eventually many form one and the infection passes on to the pelvis of the kidney, either by the pus breaking directly into it or draining down indirectly by way of the tubules.

Hemic kidney infections are all accompanied by pyuria. Sometimes the process is localized in the pelvis of the kidney,—a pyelitis; or there may be disseminated multiple abscesses in the cortex or the medullary portion of the kidney,—pyonephrosis: a condition much more serious,—frequently the result of, or accompanying a pyemia;—or there may be regional abscesses situated in one pole only which tend to point to the pelvis of the kidney and to drain through it,—the seriousness of which depends upon their extent and the virulence of the infective agent.

Quite another form of hemic infection is a pure hemorrhagic nephritis such as is seen in impetigo in children and is probably caused by the toxines of the staphylococci present in the lesions. A like condition occasionally occurs in influenza and this is more persistent and more dangerous.

Still another form of infection which has been reported by Ekkehorn is an aureus staphylococcic mycosis occupying a portion of the kidney only,—a granuloma showing granulation tissue, connective tissue and miliary abscesses.

The microorganisms which have been known to cause hemic infection of the kidney and the urinary tract are, in the order of their frequency:—colon bacilli, tubercle bacilli, staphylococci (usually aureus or pyocyaneus), streptococci, gonococci, proteus Hauser, typhoid bacilli, paratyphoid bacilli and pneumococci.

DIAGNOSIS.

Infection by the bacilli of Koch producing tuberculosis of the kidney will be considered by itself later in the paper as will also the coli bacillus infections. These infections are simple metastases,—they occur with great rapidity, are usually very acute and very persistent, and are most likely to lead to formation of multiple abscesses in the kidney tissue and often destroy the kidney and not infrequently the life of the patient very rapidly.

In their early diagnosis one has to depend more upon exclusion than upon direct symptoms. The symptoms present are essentially abdominal and frequently they may indicate just as well appendicitis, cholocystitis, malaria, intestinal disturbances, abscesses of the liver, toxemia of pregnancy or acute or chronic nephritis as hemic infection of the kidney.

The most prominent symptom in kidney suppuration in addition to fever, is marked tenderness at the costovertebral angle, which is always present. There is continued or remittent fever according to the agent of the infection. The urine does not always give the clue to the microorganism at fault. If the case is advanced or serious the urine from the affected kidney will contain leucocytes or pus and there will be a leukocytosis up to, but not usually over, 25,000. A severe chill usually means a high grade of infection. Where the pelvis of the kidney alone is infected there is fever, chill, local tenderness both with and without pressure, and from the beginning the urine obtained by a ureteral catheter will show the presence of pus and pus-producing organisms, the nature of which can easily be ascertained by culture upon appropriate media.

Acute attacks of staphylococcic and streptococcic nephritis are most frequent. They have been observed following boils, tonsilitis, acute osteomyelitis, quinsy, paronychia, ulceration about the rectum, and contagious impetigo.

In the various hemic infections other than that of colon bacillus, in the urine obtained by a ureteral catheter we often find renal casts, and always numerous epithelial cells, from the pelvis of the kidney and the tubules. These organisms being urea-splitting ones cause a more intense irritation of the mucous lining of the secretory portions of the kidney and a more rapid shedding of the superficial epithelial layers. There is no question but what the triple phosphates in these cases deposited upon debris is one of the most potent causes of the origin of calculi within the kidney or the kidney pelvis.

TREATMENT OF RENAL SUPPURATIONS.

These infections divide themselves naturally into three classes,—those that cure themselves under an abundant use of pure water plus vaccines, diet, rest, urotropin, citrate of potassium, and mild diuretics like the fluid extract of corn silk. Second, those which require incision and decapsulation where the kidney is the seat of multiple superficial bacterial infarcts and abscesses. After decapsulation we should open all the abscesses that can be seen and drain the wound. The centers of infection are usually small and widely scattered. It is not well to simply incise the kidney without decapsulation. If the abscesses are plainly superficial and not too many, even if they be of considerable size, after decapsulation, recoveries have been known to take place when they were opened and drained. Third, malignant or explosive types, characterized by great depression and marked toxemia. If the condition is unilateral, as it usually is, nephrectomy is the only remedy,—this the experience of Brewer very well establishes.

Where the infection is chiefly of the pelvis of the kidney, drainage by the ureteral catheter and irrigation with mild solutions of oxycyanide of

mercury, 1/10,000, or nitrate of silver 1/20,000 to 1/10,000, are of decided value, when combined with rest in bed and hot applications over the kidney continued until relief and cure come. In nursing children infections mild in form are frequent. If the urine is acid an alkaline therapy is indicated,—best accomplished by the free use of bicarbonate of soda, citrate of potassium and Vichy water.

In either pyelitis or nephro-pyelitis, any obstruction to the free exit of urine must be removed before a cure can be expected. The cause must be searched for and when found the appropriate remedy used. Strictures of the urethra or of the ureter must be dilated. If the kidney is out of place it must be straightened up. If there is a hydronephrosis, permanent or intermittent, either a plastic operation or a nephrectomy will be necessary. If a stone is present no cure of the kidney condition may be expected until it is removed.

COLON BACILLUS INFECTION.

Colon bacillus infection is much more frequent than any other form of hemic infection of the kidney. Its symptoms are nausea, chill, high fever to 106° Fahrenheit, and pain in the costo-vertebral angle on one or both sides. The onset is often accompanied by the presence of blood in the urine: in the absence of blood there is albumen without casts unless infection has taken place in a kidney previously the seat of nephritis. The hematuria is usually brief but not infrequently its duration will be weeks or months.

Hemic colon bacillus infections are extremely obstinate and never disappear permanently until after the removal of the original focus in the abdominal cavity. The attacks recur at uncertain intervals and frequently are accompanied by great pain in the kidney and a most distressing dysuria, and are often very destructive to the kidney, and may be fatal, either through an acute pyelonephritis or by a chronic toxemia giving rise to destruction of rest and interference with nutrition. In cases that have received proper treatment it is not easy to tell always whether a subsequent attack is a fresh infection or whether due to a few colonies which, having escaped destruction in the kidney pelvis, have multiplied and caused a relapse.

Urine containing colon bacilli is practically always acid. It is easily distinguished from that containing other infective micro-organisms, with the exception of proteus hauser, by its remaining turbid on standing because the motile power of the bacilli keep them moving instead of sinking to the bottom as do other microorganisms.

The diagnosis between colon bacillus infection and proteus hauser is easily made by the odor of the urine and by its reaction to litmus paper; that containing colon bacillus has a putrid, fecal odor while that of proteus hauser has an ammoniacal odor and also an alkaline reaction, this latter microbe being one of the urea-splitting bacteria. In examining colon bacillus urine microscopically, one finds in addition to the clouds of rapidly moving organisms few or many pus cells and the usual epithelial cells, whereas in proteus hauser one finds also triple phosphate crystals. The absence of crystals of uric acid is common in colon bacillus infection for the colon bacillus is inflicted with uric acid hunger attacking crystals or concretions of uric acid wherever it can find them. This infection frequently is preceded or accompanied by acute inflammatory infective processes within the abdominal cavity,—often appendicitis.

The symptoms almost invariably consist of a cysto-pyelitis with characteristic exacerbations and remissions and a peculiar fever curve, without a clear history of infection. There is always pain and tenderness over one or both kidneys with a cloudy acid urine showing microscopically motile bacilli and pus.

The first symptoms are often those of a light cystitis. Its appearance is a cheat for the real infection is of the kidney. The pain in some of these cases is atrocious, the urinary frequency so great as to require suprapubic cystotomy and in two cases I have seen this gave no relief, the patient dying in intense agony and with continuous vesical tenesmus.

ETIOLOGY OF COLON BACILLUS INFECTION.

Chronic obstipation certainly has a causative influence in the production of colipyelitis. We have seen several cases among elderly women in our practice where the removal of fecal impactions from the colon by great doses of black draught and high colon flushes were followed immediately by an abatement of the distressing symptoms, and the tide of colon bacilli rose and fell in the urine according to the neglect or care that was bestowed upon the bowels. Nearly all cases of bacilluria with pyelitis in children are preceded and accompanied by obstinate constipation and inflammatory infection of the gut at some point.

Anatomists tell us there is an anastomosis of lymph vessels between the ascending colon and cecum and the right kidney, and the descending mesocolon and the left kidney, which may help to explain the frequency of colipyelitis, for colon bacilli are always present in the bowel and some small injury to the mucous membrane gives the open door for their entrance to the lymph channels or blood vessels and a slight hurt to the kidney gives the opportunity for their colonizing in it and for their fixation there.

Unless the strain is a virulent one or the colonies are large they are very apt to pass through into the urinary stream and on into the bladder, if the kidney is healthy. The number and character of the bacilli depend upon the original culture and the character of the intestinal inflammation. If there is no lesion of the kidney and no obstruction to the urinary stream there will be no pyelitis, for animal experiments have frequently shown that the injection of colon bacilli into the blood will cause a bacilluria but gives rise to no inflammation of a kidney which is entirely sound; but if the colon is obstructed for twenty-four hours and the kidney is traumatized, or a stone is present in it or in the ureter, or the ureter is ob-

structed,—a colipyelitis or pyelonephritis always follows.

COLON BACILLUS INFECTION.

Treatment.

Some cases are entirely susceptible to medical treatment alone which should consist of large doses of salol; plenty of distilled water to flush the kidneys; rest in bed; a restricted diet; and hot applications over the painful kidney. More serious ones will frequently yield to lavage of the pelvis of the affected kidney, in addition to the medical measures; but in a considerable number the colon bacillus will not disappear from the urine without a prolonged drainage of the entire urinary system by a retention catheter placed in the bladder. It is difficult often to carry this treatment out because we are not always successful in impressing the patient with the seriousness of his malady, and he, often not having the time or the money, just as soon as relieved of the pain, the nausea, and the fever, wants to get about his business. Then the vesical tenesmus in some of these cases is as intense as that observed so often in tuberculosis of the bladder, rendering it impossible to use a retention catheter.

It is marvelous to witness the relief at times afforded by ureteral catheterization and pelvic lavage. It is more particularly striking where a hydronephrosis exists.

The drugs we have found most useful for this lavage are nitrate of silver, aluminum acetate and oxycyanide of mercury; the former in a strength of from 1/20,000 to 1/10,000, which is quite as efficient as stronger solutions and does not occasion disagreeable kidney colic; the aluminum acetate in a 2% solution and the oxycyanide of mercury, 1/10,000 to 1/5,000. The lavage should be repeated once in five days. If the disease is confined to one kidney the ureteral catheter may lie in the kidney pelvis for several days.

Colon bacillus infection is quite a common disease among children. The majority of cases with them will yield to an alkaline treatment and sweat baths. The best agents for rendering the urine alkaline are citrate of potassium and Vichy water; the hexamethylin preparations,—myrmalid, helmitol, hexal, and urotropin, when used with sodium benzoate, are also of benefit.

Vaccines are very serviceable in colon bacillus infections,—more particularly autogenous vaccines. By their rational use it is quite possible to bring about the disappearance of pus and albumin from the urine and banish the fever, but without the other measures which I have mentioned, they do not cause a disappearance of the microbes.

The following table taken from Ove Wolfe, who conducted the experiments for Rovzing with the use of auto vaccines in colon bacillus infection, is a striking proof of their worth:

Of 38 vaccinated—

before treatment:		after treatment	
albumin	in 79%	albumin	in 16%
pus	in 73%	pus	in 24%
bacilli	in 100%	bacilli	in 76%

Of 40 non-vaccinated—

before treatment:		after treatment	
albumin	in 73%	albumin	in 50%
pus	in 100%	pus	in 70%
bacilli	in 100%	bacilli	in 75%

We have found in our practice that his conclusions are justified. I would not care to treat serious cases of colon bacillus infection without these vaccines.

The vaccines have to be used with great caution. An over-dose is often followed by violent reaction with severe constitutional symptoms and aggravation of local conditions. I have one patient who easily takes a dose of 1,000 millions and I have another who at no time has been able to take a dose greater than 50 millions. Several times when we have tried to rise above this dose the site of the injection has become inflamed, tense, excessively painful and to all appearances suppuration seemed about to take place, chill, high fever, intense pain in the muscles of the back, headache, nausea, and great mental depression followed. The vaccines have appeared to do best for us when given at intervals of four days. If for any reason one is obliged to omit the treatment for a longer period than ten days, it is wise to return to the initial dose of from ten to twenty-five millions.

The treatment of multiple abscesses occasioned by this infection, or for grave pyelitis or pyelonephritis that do not yield to general medical treatment plus drainage, or where the cases are explosive and confined to one kidney, is the same as that which we have advocated for grave renal suppurations arising from the other infective organisms.

PYELITIS GRAVIDARUM.

Pyelitis gravidarum may be considered with colon infections. Pyelitis in pregnant women is a disease of great gravity. In 70 per cent. of the cases a colon bacillus is the infecting organism. It frequently attacks the kidney structures and destroys them, and is often complicated by the formation of stones. With the pressure upon the ureter occasioned by the drag of the gravid uterus upon the bladder there exists a certain atony of the muscles of the ureter, and the possibility of an ascending colon bacillus infection is greater under these circumstances than under any other that we know, for there are present all of the elements favorable to it: increased intravesical pressure, pathology of the ureteral mouths and the possibility of retrograde peristalsis in the presence of motile bacilli. Against this are the observations of Widal and Bernard, who in two cases of pyelonephritis of pregnancy succeeded in isolating colon bacilli from the blood stream of the same strain as that present in the urine; and agglutination experiments have been successful in showing colon bacilli cultivated directly from the blood in septicemia, the serum in one case did not affect the others, but that from a case of gall bladder infection did.

The attack is usually not sudden in its appearance, a bacteruria often exists for weeks or for months, and it is probable that in many instances a pyelitis in a mild form has existed since child-

hood, since colon bacillus infection of the kidney is very chronic and is often seen in female children. There is little if any difference in a pyelitis occasioned by the colon bacillus and that arising from other infective organisms, nor is it possible always to differentiate between a pyelitis and a pyelonephritis, for casts and tubal epithelia may be present in the urine in both from a previous nephritis existing independent of the pus infection.

The initial symptoms will sometimes resemble pneumonia, the pain in the side being close to the diaphragm causes interference with respiration and cough, but never expectoration. Persistent nausea and vomiting in the later months of gestation are very suspicious, especially when accompanied by intermittent pyuria. It is entirely different from the vomiting of the early months of pregnancy. Whenever in a gravid woman fever occurs, the cause for which is not exactly plain, and there is even very slight pain on pressure at the costovertebral angle on one side, it is well to suspect colon bacillus infection of the kidney pelvis as the trouble present, and search for it in the urine obtained by ureteral catheterization. In these cases there may or may not be a leukocytosis. If there is, it is never very high.

TREATMENT

An attention to the prodromes, ureteral catheterization and lavage will often abort an attack. Rest in bed, a milk diet, and diuresis are necessary. If the child has a right lateral position, have the woman lie upon the left side and vice versa. Salol should be given in large doses. If these simple measures do not succeed, ureteral catheterization with lavage often will. The use of autogenous vaccines and, in persistent cases, a retained ureteral catheter should be tried. If the febrile symptoms do not then abate or the vomiting cease, we must choose between induced labor or a surgical operation upon the kidney, which should be nephrotomy or nephrectomy according to the condition of the affected kidney as indicated by the functional tests and by its appearance and feel at the time of operation. The prognosis is usually good for the mother as to saving her life but not good as to the production of a permanent cure without surgical interference. It is always bad for the child.

We should advise in general, induction of premature labor, unless some special indications exist for not doing so, because the symptoms usually disappear very rapidly after the emptying of the uterus. If they do not, then nephrotomy or nephrectomy is to be resorted to.

If nephrotomy is done the kidney should be sewed to the edge of the wound in the lumbar muscles and a soft pure rubber drain introduced into its pelvis and the kidney irrigated through and through by means of a ureteral catheter every two or three days with a solution of nitrate of silver, oxycyanide of mercury or 2% aluminum acetate.

A pyelitis due to any one of the infective organisms should be treated the same way. In cases of multiple abscesses, pyonephrosis, it is sufficient and better to do a nephrectomy primarily.

TUBERCULOSIS.

Renal tuberculosis is a progressive infection, slow in its development, often remittent and probably incurable by medical means, due to the deposit of the bacillus of Koch within the tissues of the kidney by the blood stream and perhaps sometimes by way of the lymph channels. It presents different types:

First, the miliary form distinguished by the existence in the cortex of widely disseminated foci of granulation tissue containing tubercle bacilli; a complication of advanced pulmonary tuberculosis or a part of a general tuberculosis and having no diagnostic symptoms beyond the occasionally suspicious occurrence of renal hemorrhage or albuminuria and infiltration and irritation of the mucous membrane about the mouth of the ureters.

Second, there exists a chronic parenchymatous nephritis with abundant albuminuria, scanty urine and dropsical effusions without cardiac hypertrophy and without increased arterial pressure. This occurs occasionally in the later stages of pulmonary tuberculosis and is of rapid development, the urine is irritating to the trigone, the bacillus cannot often be found but guinea pig inoculations are usually positive.

Third, it is claimed by some writers that there exists a tubercular interstitial nephritis.

Fourth, and most important, is the form characterized by a slow infiltration of the parenchyma with minute foci of infection which tend to join with each other forming circumscribed nodules or masses that soften or ulcerate and undergo caseous degeneration. Fortunately this process is at the beginning almost invariably unilateral, and occurs as a rule in persons who are not affected with active tuberculosis, but have lesions that appear to be cured, or present no evidence of tuberculosis. This is at the same time the most hopeful and the least hopeful of tuberculous changes in the kidney, and is the one usually meant when renal tuberculosis is spoken of.

SYMPTOMS.

At its commencement there is no symptom or group of symptoms that is diagnostic. The first of all is vesical irritability soon followed by the appearance of albumin in the urine and perhaps hematuria. The cystalgia is apt to be disregarded for a long time, the albumin to remain undiscovered until a free renal hemorrhage alarms the victim and sends him to the physician. Even then most generally the significance of the syndrome is not understood. Renal stone is a rare disease, renal tuberculosis a common one, yet the average consultant will search diligently for the calculus that is not there and forget all about the tuberculosis that is. The presence of pus in the urine is not long delayed and with it the agent of the process, the bacillus of Koch, appears.

It is important that the exact significance of this picture should be appreciated by every physician. Be suspicious of every case of prolonged

vesical irritability the origin of which is not entirely clear, for therein a renal tuberculosis may be ambushed,—a chronic infection, slow in its development, progressive, involving finally the entire urinary system, and mercilessly fatal,—more important by reason of the fact that from its anatomical peculiarity early skilful surgical aid will affect a permanent cure of more than 50% of the cases.

MODE OF INFECTION.

How does the bacillus invade the kidney? By the blood stream in all but the rarest of instances; the process is exactly the same as that which takes place in the other hemic infections. Where open tuberculosis, patent to the dullest clinician, active pulmonary lesions, joint or bone affections, or degenerations of the genital organs are present, the source of infection is so plain that no mistake can be made. Much more often a nidus of walled-in bacilli, the remnant of an infection of childhood, unheeded or unsuspected, exists in the glands of the mediastinum or the neck and under the depressing influence of trauma, acute inflammatory disease of neighboring parts, or impoverishment of blood following vigil, or overwork or overplay in vitiated air, softening of the caseated gland takes place discharging sparse bacilli into the blood stream attached to tiny fat drops or tissue shreds, minute emboli, that are of such low vitality that when arrested in the capillaries of an injured or diseased kidney they colonize slowly and without vigor, producing a form of renal tuberculosis which is from the onset essentially chronic, the clinical form which is the most important,—that now under consideration,—unilateral, nodular, caseating renal tuberculosis.

Why tuberculosis of any of the paired organs should almost invariably at the start be unilateral is difficult to explain, but it is a clinical condition of universal observation and this form of tuberculosis of the kidney is no exception to the rule, fully 85% of the cases are unilateral at the outset. It is this very anatomical peculiarity which renders them hopeful subjects for surgical therapeusis. If given time enough for development each one of these cases will eventually become bilateral infections and when they do it is too late to consider a cure by surgical interference. How long a time does it take? This varies with the virulence of the infection and the resistance of the patient. When it does occur are the bacilli derived from the original nest from which the first kidney was infected or is their source the diseased kidney itself? The researches of Israel upon the frequence or banality of infection of the remaining kidney after nephrectomy for this disease give the answer of this question, for they show conclusively that the presence of a tuberculous kidney in the body of a person predisposed to tuberculosis is a greater danger to its healthy fellow than the presence of infective foci elsewhere.

It is interesting to watch these cases year after year where operation is refused. The great majority of them present an infection of the second kidney within three years and only about 20 per cent. of them live beyond the fifth year. In a few the disease appears for a long time to be really benign, the hemorrhages cease, the urine clears up, the vesical symptoms ameliorate and almost or entirely disappear, there is no inconvenience, the cystoscopic picture becomes almost normal, no tubercle bacilli can be found, and even the guinea-pig test may be negative. This apparent cure is not accomplished at once but slowly, and to any agent that may have been administered, or to any medical cult that may have been employed, a cure is credited. But, alas, these cures are but frauds, they do not exist; it is only the segregation of the infected focus that has taken place, firmly walled off from the sound kidney structures by inflammatory tissue which for the time being is sufficient barrier to their extension, and cut off from the urinary stream by the automatic ligation of the calyx or calyces of the diseased portions of the kidney, or perhaps the sidetracking of the entire kidney by the stenosis of its ureter, the bacilli sleep peacefully in their cheesy storehouse until constitutional disease or trauma or renewed activity once more liberates them. However long the interval of inactivity may be, the postmortem table never shows these cases as cured. Once started, the disease is subject to many remissions but never disappears. The pity is that when we encounter a case there is no way to tell whether its progress will be slow or rapid; we only know that, left to itself, it in time will be fatal.

The kidney does not present, upon section, the same appearance in all of these cases, but one is always impressed by the pathology of their incurability. Occasionally one finds calcified lesions, but always with active nodules beside them; just as rare are perfect cicatrices indicating fibroid healing of a nodule, for beside or within them active foci can be found. The whole kidney, or one pole, becoming a cheesy cavern, often breaks down and is discharged through the ureter; but its walls, filled with purulent urine, are always covered with tuberculous granulations. Even the clear contents of the cysts found in excluded kidneys is fatal to guinea pigs.

Of all the chronic infections to which the human body is subject, tuberculosis is the most kind. Judging from the experience of the operating-room and the section-room and the medical clinic, the enormous majority of those attacked by tuberculosis of the lungs, bones, lymph glands, skin, etc., get well. Then why does not the kidney recover? Perhaps it does in the miliary forms and in tuberculous nephritis, but not in the caseous forms. There are two plausible reasons for this: the first is the universal tendency to destruction of the kidney tissue by the caseous degeneration, and the other the continued interference with the circulation of the organ and the retention in it of the urine loaded with tubercle bacilli, caused by the infection of the walls of the ureter and its obstruction by the inflammatory processes engendered thereby.

DIAGNOSIS.

The recognition of the disease and its diagnosis is easy to the instructed. The disease is a very common one, and yet the medical profession in general never recognizes more than one out of five of these cases until the kidney is practically destroyed. In addition to the existence of vesical irritability, pus, tubercle bacilli, and perhaps blood will be found in the urine obtained by a sterile ureteral catheter directly from the pelvis of a kidney suspected to be the seat of this disease. The patient should always have been supplied with a liberal quantity of water for a period of at least two hours before the catheterization, and the urine should be collected for at least one hour. If acid-fast bacilli are not found or very few of them are found, or only spores are found after prolonged centrifugal sedimentation at a very high speed, the sediment should be injected into a guinea pig for the animal test, or the complement fixation test of Debré and Paraf, which consists of the demonstration of a tuberculous antigene in the urine, should be applied.

To an expert in cystoscopy the diagnosis may be surmised with almost positive certainty from the presence of a peculiar injected appearance of the mucous membrane of the trigone, which looks as if finely powdered paprika were blown with great force into it. There is also edema and not infrequently ulceration of the mucous membrane within and about the trigone and at the vesical neck. There is no distinct diagnostic appearance of the ureteral meatus, for this may be concealed in a mass of granulation tissue, deformed and constricted by ulceration, or open like a golf hole, or only slightly puffed by the irritation of the bacterins. The chromogenetic functional tests aid only in determining the secretory capacity of the kidney without indicating the cause of its depressed function.

If the edema or ulceration of the trigone or stenosis of the ureter makes it impossible to catheterize the ureters, exploratory examination of each kidney should be made to determine which is the diseased one. We cannot be too strongly reminded of the fact that we must distrust the evidences of a tumor of the loin discovered by palpation when we are seeking the diseased kidney. The mass may be only a hypertrophied healthy kidney or it may be the only functionating one, and also not free from disease. Each kidney should be brought from its bed upon the loin, and its entire surface, and more particularly its pelvis and its ureter, viewed and palpated for pathological changes. A diseased ureter will be thickened and adherent. The fatty capsule about a diseased kidney will be adherent in places to the true capsule, sometimes so intimately associated with it that it is impossible to separate them. In case of doubt it may be necessary to open both ureters some distance from the kidney and obtain a specimen of urine from them for microscopical examination before deciding which kidney is the diseased one.

Having made our diagnosis and ascertained the prognosis in the special case, what are we to recommend to our client? There are but two ways of treating him. He must either have the general treatment for tuberculosis; climatic and hygienic measures combined with diet, drugs of the creosote class and tuberculin, or we must subject him to surgical exclusion of the diseased kidney, nephrectomy. The combined work of many skilled urological surgeons in all parts of the world during the past ten years has demonstrated that the only way to cure a kidney affected with unilateral nodular, caseous tuberculosis is nephrectomy. It results in the immediate relief of 75 per cent. of the cases and in the permanent cure of 50 per cent. of them—the immediate mortality should not exceed 6 per cent. and is for some operators as low as 1 per cent. The natural history of the disease shows that, though remissions are many, the progress is always relentless, eventually ending in death; but before the advent of the lethal day the diseased kidney invariably infects its fellow, and when the patient does not go out by reason of his renal tuberculosis, he dies of tuberculosis of other organs. All honor to our dead colleague Albarran, whose work has made such surgery possible! If the disease is far advanced and both kidneys are tuberculous, if one shows great distress and the other shows sufficient functional capacity to carry the burden of life, the less normal one should be removed. This operation is, of course, palliative, for death in these cases usually takes place in the first year after operation.

Nephrotomy is not curative and should only be resorted to in distinctly suppurating cases, especially when the process has become perinephritic and where the general condition of the patient will be improved by temporary drainage awaiting a nephrectomy, to be done as soon as it is safe.

In the last twenty years I have nephrectomized quite a large number of patients for unilateral, nodular, caseous renal tuberculosis with a very low percentage of immediate mortality and a very high percentage of prolonged cure. I have not had the time to segregate these cases from my history sheets. I know, however, that very few of them have been early cases; for every one that has come to operation at least three have refused the relief afforded thereby. It is difficult to impress the sick man and his friends with the seriousness of his condition and to instil into him the belief that he can be cured by nephrectomy. I find that it is not the explanation of the percentage of permanent cure resulting from the removal of the diseased kidney that moves many to submit to nephrectomy, but it is the atrocious and almost continual pain in the bladder that drives him to it in desperation, and most usually the early stage has passed when this occurs. Again we very often have had the opposition of the medical advisor in these cases, for a large percentage of the older practitioners of medicine are skeptical about the existence of renal tuberculosis, or are fearful of the results of operation, or believe that the patient can be cured by medical means.

I am not so sure that an immediate mortality of from 1 to 6 per cent. would obtain if the work of

the unskilled and infrequent operators was grouped with that of the skilled and frequent. I have removed many more than one hundred kidneys for various surgical diseases, and I can not be made to believe by any one that the operation is an easy one without danger.

While I know that medical treatment is not curative of this condition of chronic nodular, caseous renal tuberculosis, the natural history of the disease, coupled with the reluctance of the average person to submit to the mutilation involved in the removal of a kidney, induces me always to delay for a while with medical treatment until severe renal pain, persistent hemorrhage, attacks of colic, aggravated cystitis, progressive loss of weight or the rapid fall of the functional capacity of the kidney tell me that it is surely time to interfere. I have not yet seen any cures that I could attest as such resulting from a reasonable medical treatment —a cure in which the urine had become without pus and without bacilli, the bladder symptoms both symptomatically and by the cystoscope abated, pig inoculations negative, and the ureteral catheter demonstrating a kidney which had been diseased producing a normal urine.

To prevent disappointment it is best to look upon tuberculin as of assistance in the treatment of tuberculosis of the kidney and not as a specific remedy therefor. In forming an opinion of its value we must use as a base the reports of those who have had the patience to use it, over long periods of time, upon numerous cases that have answered to the requirements of a perfect diagnosis: the direct demonstration of tubercle bacilli in an acid purulent urine received in a sterile container from a sterile ureteral catheter introduced into the pelvis of the kidney of a person afflicted with polyuria, dysuria, or both, or the development in a guinea pig inoculated with the sediment of this urine, of tuberculosis at the point of inoculation.

The evidence of experienced operating surgeons who have frequently nephrectomized such patients with a low mortality both immediate and remote, yet who have had the courage to thoroughly test out the merits of tuberculin, is the best evidence of all, for they know and appreciate better than others the unreliable history of the disease and its unaccountable vagaries—how the individual develops a marked resistance to re-infection both from within and without, accounting for the slow progress of renal tuberculosis, its remissions of disturbing symptoms, and sometimes of apparent cure for months and for years, by the encapsulation and sealing up of the abscess cavity, thus introducing an element of doubt always into the origin of any favorable results following the use of tuberculin in these cases.

Thus the use of tuberculin as a remedy in tuberculosis of the kidney can never be other than empirical. Many of those who have sung the praises of its curative powers have not always been very careful to make sure that their cases were actually tuberculosis of the kidney to start with, and were satisfied to report a cure when their patients increased in weight and the vesical symptoms decreased in intensity. There is no case on record that I have been able to find that answers the full requirements of a cure of tuberculosis of the kidney by tuberculin, and yet there are many intelligent urological surgeons who believe that it is possible if the disease is recognized early that it may be cured by hygienic and climatic measures if aided by tuberculin, and all agree that it is at least a useful placebo in bilateral renal tuberculosis, and in those cases where one kidney having been removed the remaining one is attacked by the bacillus. Speaking for ourselves, though we are firmly convinced that in unilateral nodular caseous tuberculosis of the kidney, in the presence of a sound companion kidney and without the existence of any other contra-indication thereto, nephrectomy is the only remedy that promises a permanent cure, we have found it very difficult to convince the sick man and his friends of the benignancy of the operation in skilled hands and the necessity therefor, and so we have been compelled to treat a number of such cases against our judgment as what was best, by tuberculin, duotal and hygienic measures. The clinical results in a few instances have been astonishing and in many fairly satisfactory, and were it not for the inexorable average history of unilateral nodular caseous tuberculosis of the kidney, did we not know that the walled-in abscess may contain living bacilli that hibernate for years only to be released by some mechanical insult to the kidney or some lowered resistance giving rise to metastatic auto-infection again, we might well believe we had seen cures effected by tuberculin.

It is not a matter of much importance what particular preparation of tuberculin is used. The Belgians, and many of the French, use Deny's B. F. Other French investigators believe in the virtues of Spengler's I. K. In Germany and America Koch's O. T. and N. T. and B. E. are in most general use.

The dose, however, is not a matter of indifference. It should be small, always very small, at first. One that will equal 1/1,000,000 to 1/100,000 mg. of O. T. is always sufficient to start with and it should be raised very gradually, avoiding the occasioning of a local or general reaction. The intervals of its administration should be four or five days. Used in this way it helps many and injures none.

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THE OPERATION OF SUPRAPUBIC PROSTATECTOMY AND SOME OF ITS RESULTS.*

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Before deciding on the serious operation of suprapubic prostatectomy, an accurate diagnosis is of the first importance, the several points investigated indicating the operation and the probable results you may expect. The patient may want to know why it is necessary that he must have an operation; what will happen if he does not; what is the danger of the operation; and what is going to be his condition after the operation. In answering the first question, it will be necessary to enter briefly into the pathological conditions that may arise from enlargement of the prostate. During the course of this disease the growth of the prostate into the bladder raises up the bladder base, causing a hollow space behind it—the "post-prostatic pouch"; the bladder is trabeculated, hypertrophied, and later on dilated, sacculated or pouched. Profound changes take place in the upper urinary tract. The ureter and renal pelvis are often dilated to a very large size, with hydronephrosis and renal atrophy. You have also that very insidious condition of chronic interstitial nephritis, so common in prostatic obstruction, which increases the risk and aggravates the trouble. This long and complex urinary system, with its lowered resistance due to prolonged back pressure, is still further liable to infection from various micro-organisms introduced by passing a catheter or by the blood stream. Death is brought about by sudden renal infection and pyelonephritis, or by slow renal destruction from persistent back pressure, often unsuspected by the physician. It is not necessary that an extreme amount of back pressure should exist—a partial retention due to prostatic obstruction is sufficient to produce chronic interstitial nephritis and other complications which hasten the patient's death.

The question of "catheter life": The dangers and difficulties that surround catheter life are many. The risk of infection and hemorrhage. It breaks down sooner or later and leaves the patient in a worse condition for a successful operation. The mortality is very high, some place it as high as 100%. The average duration of life is about three to four years. Squiers places it at two and one-half years. It is an established fact that you are not justified in recommending catheter life in cases suitable for operation. The delay increases the risk. It is only indicated when operation cannot be done.

The dangers from suprapubic prostatectomy are shock, hemorrhage, uremia, septicemia, bronchitis, pneumonia, thrombosis and embolism. Some of these causes are due to pre-operative diseases of the kidney and many of them can be avoided by adopting careful preventive treatment before operation.

It may interest you to quote the published statistics of some of the large London hospitals. In one of the largest, during a period of 10 years, there was a mortality of 35%. In four of the large London hospitals (St. Bartholomews, University, Westminster and Middlesex) the mortality for a period of four years—from 1906 to 1910—was 21.5%. Compare this with the results of St. Peter's Special Hospital for urinary diseases. Freyer's mortality for 1,036 operations was 5.5%. He began with a mortality of 10% in his first hundred, which he steadily decreased to 3% in his last hundred. I understand that later still he has a mortality of 3% for 300 operations. Sixty-five of these were octogenarians, eleven border line cases of 79 years of age. Thompson Walker, with whom I had the advantage of working at the same hospital, has a mortality of 5% for 112 cases. John Pardoe's results, I understand, are similar, also at the same hospital. These statistics do not give the real mortality of the operation as amongst the great number of general surgeons, and in the general hospitals all over the world. It is probably much higher, nor is it due to deficient technic as compared with the specialist.

The object of quoting these statistics is to bring to your notice that the mortality from this operation, as practiced in many general hospitals in recent years, does not show the reduction to be expected in an operation which today has justified itself. As one general surgeon states, "We see cases which, in the light of our present knowledge, seem eminently suitable for operation. The operation is simple, yet the patient dies from causes which appear to be unavoidable."

I have seen cases operated on successfully at St. Peter's Hospital, suffering from mitral and aortic disease, multiple sclerosis, renal diseases, old standing hemiplegia, and even some cases helplessly ill, almost moribund, are included. In many of these cases the results of a skilfully conducted prostatectomy are little short of miraculous.

Results after suprapubic prostatectomy. In order to understand the condition of a patient after

* Read before the State Medical Society of Nevada, at Reno, September, 1914.

prostatectomy, I will describe a few points in the anatomy of the prostate before and after the operation. The prostate enlarges, spreads out in two directions: backwards outside the bladder, pushing the vesicles before it and separating them from the bladder wall; upwards inside the circle of the sphincter muscle, which it gradually stretches more and more as it grows larger. In its growth upwards it forces its way through the trigone muscle at one or more points covered only by the mucous membrane of the bladder and posterior urethra. The internal orifice of the urethra is often large and funnel-shaped. The structures removed are the prostate and prostatic urethra. There are two varieties: one with an intra-vesical projection, the other wholly extra-vesical. The intra-vesical projection when present shows the deep groove of the sphincter of the bladder. You may have behind the opening of the internal orifice a median lobe, or on each side two lateral lobes, or one lateral lobe or a collar projection. On examining the prostate you will see the anterior commissure is complete, extending all the way down between the two lobes. The posterior commissure is complete down to the verumontanum and from this point downwards the lobes are separate, the posterior wall of the urethra being wanting. The anterior commissure may be split up and the lobes separate, opening out in front and united, hinged-like, behind. The two lobes are not separated histologically although physiologically distinct. You may have inflammation and abscess or malignant disease in the one lobe independent of the other.

In the operation the mucous membrane is easily scratched through, the line of cleavage is easily found. The finger sweeps around until the urethra is broken through; the blood vessels are out of the way and bleeding soon ceases. The prostatic bed as felt has a smooth lining and the internal sphincter ridge can be made out.

The cavity seen after the removal of the prostate between the bladder and the membranous urethra is roofed over by the trigone. The wall consists of the fascial sheath of the prostate. This is what prevents the urine from escaping into the surrounding tissues. The opening into the bladder is seen on the anterior portion of the roof; the vesicles are seen posterior and external to the capsule, pushed out of their original position beneath the bladder base. An overhanging ledge is formed by the trigone. The cavity contracts to a small size and remains for years afterwards.

Retention of Urine: In many cases of small and medium sized prostates the compressor urethræ at first acts, and later on during convalescence the sphincter vesicæ resumes its function, but in the majority of cases it is now known that the vesical sphincter remains rigid and dilated and does not resume its function. The compressor urethræ then acts as sphincter and retains the urine. The patient has complete control over his urine. Not one case of incontinence of urine has been known to occur in about 1,500 cases operated on at St. Peter's Hospital in London, except those rare cases in which organic nervous disease existed.

Cystitis. If cystitis is present before operation it generally clears up with the free drainage provided and thorough washing out of the bladder during convalescence. Some rare cases persist. They may be due to extensive sacculation of the bladder or old standing pyelonephritis. Irrigation and vaccine treatment assist in curing some of these cases. If the infection is higher up in the kidneys, washing out the renal pelvis may improve some of them. Nephrectomy may be advisable if only one kidney is affected.

Calculi: In those cases where severe cystitis persists with the decomposition of urine, calculi frequently occur. When they do occur it is sometimes in the prostatic cavity and there is often difficulty in crushing them. They can be crushed with the lithotrite or removed by perineal section. The most frequent cause of the recurrence of stone after prostatectomy is shown to be due to the presence of severe cystitis.

Hernia of the suprapubic wound occurs rarely. It is often due to keeping the drainage tube too long in place. It may be caused by too large an incision. It is important to close the wound around the tube accurately.

Suprapubic fistula is also a very rare occurrence. It may be due to carelessness in the after treatment of cases with badly infected bladders and generally in very old people. Wrong technic in closing the wound around the drainage tube may cause it. The fistula can be cured by excision. In perineal prostatectomy the fistula is incurable.

Sexual function after suprapubic prostatectomy. As mentioned before, the posterior portion of the prostatic urethra with the verumontanum and ejaculatory ducts invariably remain behind after the prostate is removed. In rare cases some injury may be done On examination of these cases per rectum you will find on palpation the vesicle swollen and tense, indicating some obstruction of the ejaculatory ducts. You will find this condition in only very few cases. Many of the patients are very old and their sexual functions have abated. Some suffer from extreme sexual irritation leading to excesses and often a perpetual torment to them. This sexual irritation disappears after operation. As a general rule if the patient is in good health his sexual powers are improved and ejaculation is normal. In those cases where erection is normal but there is no ejaculation, the semen is discharged into the cavity left by the removal of the prostate.

Hemorrhage. Secondary hemorrhage may occur a week or two after operation. If severe, it is treated by opening the wound, reinserting the tube and packing the prostatic cavity.

Remarks. With the exception of these cases mentioned above, the after results are very satisfactory. The one remarkable feature about these cases of suprapubic prostatectomy is the complete control the patient has over his urine, considering many of them may have been on catheter life for years. The patient's health and vigor improves to a remarkable degree.

I will give you a short history of a typical advanced case of enlargement of the prostate, before and after operation.

Patient aged 68 years; for five or six years had difficulty in passing his urine; got up three or four

times at night. Two months ago he had complete retention of urine, and was relieved by catheter. He had much difficulty in using his catheter. He had attacks of fever with chills. He suffered from thirst, dry tongue, and complained of being drowsy. He was rapidly wasting and anemic. I drew off 18 oz. of residual urine containing much pus.

On rectal examination, prostate was markedly enlarged, resilient, movable. Cystoscopy showed a prominent, bilateral, introvesical projection. The bladder was much pouched and trabeculated.

Operation: The prostate was removed by the suprapubic method, coming away complete in its capsule. There was little hemorrhage; the wound closed 27 days after. He called to see me recently and says he is in the best of health. He is 12 lbs. heavier than he has been for years. He says he retains his water as well as ever he did. He has no trouble whatever, and he says micturition is freer than it has been since his boyhood. This shows what excellent results can be obtained by suprapubic operation in advanced cases, suffering from back pressure and its complications.

It seems as if nature designed these parts for suprapubic prostatectomy. The main bulk of the gland is intravesical, covered only by a mucous membrane. The internal sphincter is dilated and pushed out of the way of injury. The line of cleavage between the false capsule and the sheath is provided. The ejaculatory ducts are pushed away to a region of safety and separated off by the thick-walled false capsule. The large blood sinuses lying between the sheath and the false capsules are protected by the latter. The external sphincter is also safe from any damage. One of the most satisfactory features of the operation is that the patient as a rule states after the elapse of months or years that he feels from ten to twenty years younger than he did before the operation. It is a fact that few major operations in surgery give more satisfactory results or greater relief from untold suffering in old age with less risk than a successful suprapubic prostatectomy.

THE CARRIER PROBLEM IN DIPHTHERIA.*

By W. H. KELLOGG, M. D., San Francisco.

A comparatively recent development of sanitary science is the discovery that mild unrecognized cases and healthy carriers are a very important source of new infections. Carriers are persons who harbor within their bodies pathogenic bacteria, without suffering from the disease themselves. They may be carriers by reason of the fact that they have recently recovered from an infection and the bacteria still persist within them, or they may never have had the disease, but have acquired the organisms by association with other carriers or cases.

Diphtheria was the first disease in which carriers were recognized and it remains the particular disease in which carriers are of the most importance in its propagation. In fact when rigid isolation of cases is practiced, carriers are almost the sole means of spread.

The most modern teaching, and there are few who dispute it, is that diphtheria is spread almost exclusively by personal contact. Fomites and room infection are things of the past; so also contagion through the medium of the air. The latter is a medium only so far as the zone of possible droplet infection extends around the person supplying the virus. It is therefore evident that the presence of diphtheria carriers in a community is of the utmost importance from the standpoint of prevention.

The problem is, how should they be handled by boards of health, and by practicing physicians.

It is usually stated that about 1% of healthy persons in urban communities are diphtheria carriers. On this account some physicians are inclined to think that any work directed against the carrier is nonsense; that you can find diphtheria bacilli in almost any person's mouth. But this is a wrong position to take, as I hope to make clear later. The reason one per cent. is found in urban communities is that cases are always present and cases are always present because carriers are always present. It is an endless chain. When, by reason of a suitable chain of circumstances, in a community small enough to make this possible, the infection disappears entirely, no further cases appear nor are there any carriers present until the infection is re-introduced from without. This has been proven by bacteriological examinations of numbers of people in communities that have been free from the disease for two or three years.

On the other hand, in neighborhoods and schools where there is an unusual prevalence of the disease, carriers are always found and in much higher percentage than the usual 1%. We have recently had quite an extensive experience in searching for carriers, in the Laboratory of the Health Department of this City.

A total of 3,113 children have been examined during the past 60 days and some interesting observations noted. In one large school, that was not particularly under suspicion except that it was located in the part of the City where the disease was prevalent, only a little over 1% of the pupils were found to harbor the diphtheria bacillus.

Another large school in the district of greatest prevalence of cases, was found to contain over 7% of carriers. A small school in the outskirts of the city had 25% of carriers, the teacher being one of them. The percentage of carriers in the total number examined, was 3.62%.

The percentage of positive results obtained in any particular instance will depend somewhat on what morphological characters are regarded by the bacteriologist as constituting a diphtheria bacillus. Personally, I have observed that well over 90% of the cultures obtained from clinically suspicious cases and when examined within 24 hours, conform, when stained by a differential method such as Neisser or Ponder's stain, to a certain well defined type, namely, the polar granules and faint staining of the intermediate portion of the rod. Therefore, in the diagnosis of carriers, I exclude the barred types and others of Wesbrook's classification. No attention whatever is paid to the pseudo-diphtheria bacillus of Hoffman or in fact of

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anything that does not show the granules with the strongly acid stain.

The question of the virulence of the culture obtained from a carrier, is, I believe, of very minor importance. The determination of this point, when dealing with a large number of cases adds considerable work to the laboratory and, after it is done, it is a very grave question whether or not an avirulent strain may not under suitable conditions become aggressive and a toxin producer. Indeed several workers have claimed to have changed by cultural and inoculation methods, non virulent strains into fully virulent ones; and the contrary is also true. Virulent cultures can be attenuated by laboratory methods until they lose the power of toxin production. Parke and Williams believe that non virulent strains are true diphtheria bacilli that have become attenuated by natural means.

Among some of the observations we have recently made, bearing on the subject of carrier transmission are instances of which the following are samples: In two cases where carriers were excluded from school, diphtheria developed in other members of the family during their exclusion from school. In four instances, carriers, excluded from school, came down with diphtheria themselves. Another set of circumstances seems to point to the teachers and guardians of the children as the source of infection: Many cases of diphtheria having been traced to a day home for children, a search for carriers was made, with the result that two of the Catholic sisters in charge were found to be carriers in addition to about 15% of the pupils. From the fact that these two sisters have proven to be resistant to all means so far adopted to clear them up, it seems a reasonable supposition that they were the original sources of infection in that school.

The acquisition of diphtheria bacilli in their throats, on the part of our nurses of the school inspection department is a phase of the carrier problem that is giving considerable concern to their chiefs. The force is already inadequate and to have it cut down by the retirement of two members as carriers, which happened last week, seriously cripples the department.

The question of the carrier in diphtheria is treated in a somewhat contradictory manner by Chapin. He says: "It may be admitted that only 1% of the population are carriers—also that only 15% of these carry virulent germs, though it is really often much greater. It may also be admitted that these bacilli are not usually so numerous as in the sick, though it is known that they sometimes appear in pure cultures; yet even admitting all this, there will be in inter-epidemic periods in a city of 100,000 people at least 150 well persons carrying virulent diphtheria bacilli.

"Why should the bacteriologist ignore these 150 sources of infection and insist on two throat and nose negative cultures from every reported patient?

"Or why should he, as he occasionally does, recommend isolating the carriers in the family but ignore all other carriers?

"Why neglect this whole question of carriers, and spend endless time in devising methods of liberating formaldehyde to kill the few bacilli that may remain about the house?

"Why worry about the saliva that may have gotten onto a book, a coat, or the wall of a room, and neglect the reader of the book, the wearer of the coat and the dweller in the room, who is probably growing the germs in his throat and nose?"

And yet in spite of all this, the City of Providence, under Chapin's guidance, has abolished the requirement of negative cultures for the release of diphtheria cases, on the ground that there are so many more carriers abroad already that a few more will make no noticeable difference.

Strange to say it apparently does not make the difference that we would expect. The truth of the matter is that there are factors playing a part in the prevalence of infectious disease that we do not fully understand; otherwise we would not have those instances of subsidence of epidemics in the face of neglect of precautions by the authorities and of the spread of infections in spite of the most intelligent and vigorous opposition.

It is probable that in diphtheria, at least, the mild cases and the unknown carriers account for the seeming discrepancy noted by Chapin of the unimportance of examining convalescents and confining them if found to be carriers. Until we have found a way of rounding up and treating all carriers in the community we will always have diphtheria with us, and this is manifestly impossible when so many carriers exist.

The question of what can be done to clear up a carrier now presents itself. In my experience, it is a most discouraging thing. The use of sprays of cultures of staphylococcus has had the endorsement of some eminent men, but the reports are contradictory and on the whole not very encouraging. I have noticed that it apparently succeeds better in the hands of some physicians than of others and it may depend somewhat on whether the patient and family are depended on to apply the treatment or whether a nurse or the physician himself applies it. The cultures should be fresh 24-hour cultures in bouillon and should be applied three or four times a day.

We have produced and supplied to physicians in a number of instances, a vaccine consisting of a killed culture of the bacilli. The few cases in which it has been used cleared up but not so rapidly as to point to the vaccine as the undoubted cause.

Apparently the greatest evidence of benefit has been produced by the use of one part of tincture iodine to three or four parts of glycerine, applied on a swab to the tonsils and pharynx. We still have, however, some carriers on our list who are resisting this treatment.

In some cases, the only effective procedure is tonsillectomy; and where there exists the slightest excuse for the operation aside from the presence of bacilli, it should be performed, as it offers the best hope of a prompt clearing up of the case.

RETRODISPLACEMENT OF THE PREGNANT UTERUS.*

By LOUIS I. BREITSTEIN, B. S., M. D., San Francisco.

Instructor of Obstetrics in University California Medical School.

In presenting this subject I aim to emphasize certain indications that should lead to an early examination of pregnant women and the speedy abandonment of conservative treatment in dealing with those cases that show no tendency to right themselves.

I use the term retrodisplacement of the pregnant uterus as a common term, to include the varieties of pure retroversion, pure retroflexion, and a combination of the two; i. e., retroversion of a retroflexed uterus. Fully twenty-five per cent. of women in general have retrodisplacement of the uterus. Just what percentage of pregnant women suffer with this condition is impossible to state because the majority of women are not examined in the early months of pregnancy. I hold, contrary to the general opinion, that this condition is no bar to impregnation; whether the pregnancy is carried to full term is another question.

There are two views as to the cause of this condition. Retrodisplacement of the pregnant uterus in early pregnancy may arise de novo, due to the same causes that bring it about at other times; e. g., a fall, heavy lifting, coitus, carelessness in permitting the bladder to become over-filled, etc., or, pregnancy may start in a uterus already retrodisplaced. This latter is the most common cause.

The clinical features of such cases are best described by citing some cases that have occurred in my service at the University of California Hospital, Mount Zion Hospital, and in my private practice.

Case I. Mrs. W., age 27, last menstruated March 7th, 1912. Now gravid for the sixth time; five of her pregnancies terminated in abortions, all of which were induced. The second and third were followed by fever and great pain in the lower abdomen, which was evidently parametritis. She came to my office April 15th complaining of a dragging sensation in the pelvis, constipation that was becoming very obstinate, backache, nausea and vomiting that was making her very miserable. On examination I found a pregnant uterus that was so retrodisplaced and bound down by adhesions that it was impossible to correct the faulty position. I packed the posterior fornix rather lightly, however, and instructed the patient how to keep her bladder and rectum empty. After continuing this for three weeks I found that the uterus was becoming more movable and the use of the tampon was discontinued. At the eleventh week of gestation the patient reported that all her symptoms were gradually disappearing. An examination at the end of the twelfth week revealed the fact that her uterus had righted itself and was ascending into the abdominal cavity.

This is only one of a large number of such cases. The rule is that spontaneous reposition will occur in the absence of any severe complication. This case was complicated by adhesions but the uterus replaced itself nevertheless, either by the adhesions softening and permitting stretching, or by disappearing altogether.

Case II. The patient whose uterus is retrodisplaced and bound down by adhesions is not always so fortunate, however, as case I, and case II had a different termination. Mrs. A., age 25, pregnant for the second time, summons me to her home June 12th, 1913. Her first pregnancy terminated in abortion at the third month, followed by fever and hemorrhage, and she was in bed for three weeks. I find her flowing profusely, and from her story she is three months pregnant. She has been spotting for the last two days, with severe pains in the back and in the lower abdomen, which are becoming of an intermittent character and more frequent. For the past two weeks she has had trouble in emptying her bladder. Examination reveals a tumor mass in the posterior fornix and I was not sure whether I was dealing with a retrodisplaced pregnant uterus or a broad ligament extra-uterine pregnancy. The patient was sent to hospital and after emptying both bladder and rectum a careful examination was made under anesthesia. I found a retrodisplaced pregnant uterus bound down by firm adhesions, the cervix being just at the symphysis and the os open admitting one finger. An abortion was inevitable. The uterus was emptied in the usual manner and a two and a half months fetus removed. Convalescence was complicated by a marked cystitis and pyelitis which cleared up in a measure after draining and irrigating the pelvis of the kidney. On the seventeenth day postpartum the patient left the hospital. There was pus microscopically in the urine, constipation was marked, and the uterus was immovable with the fundus in the Douglas. The patient refused to submit to an operation to correct the retrodisplacement.

The points of interest in this case are: 1st, an antecedent history of pelvic trouble; 2d, abortion; 3rd, amenorrhea for three months, and 4th, bladder disturbance and other symptoms showing beginning incarceration. Williams in his textbook on obstetrics, page 574, says, "Abortion is common in pregnancies complicated by retrodisplacements. It usually occurs in the course of the third month, when the growing uterus pretty well fills the pelvic cavity and, becoming irritated by the pressure to which it is subjected, begins to contract and thus brings about the expulsion of the ovum." Changes in the endometrium, due to the retrodis-

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placement, are just as apt to bring an abortion as irritation of the uterus due to pressure.

These causal factors in the production of abortion can surely be cured and a corrective operation for the retrodisplacement should be performed. The operation best adapted to the particular case in hand should be selected, the non-pregnant state being the time most suitable. Even if the diagnosis of retrodisplacement is not made until the early months of pregnancy, the operation may still be performed without hesitation. Formerly it was believed that the pregnant woman should never be operated upon, the extraction of a tooth even being considered as a procedure that would cause abortion or premature labor. We now know, as a result of the employment of anesthesia and improved surgical technic, that many operations may be performed at this time with but little additional risk. As instances supporting this statement I cite cases III and IV.

Case III. Mrs. B, age 23, para I, referred to me by Dr. Bine, with a previous history free from pelvic trouble, was married in June, 1912; she menstruated last on Oct. 8th, 1912. I saw her for the first time in my office Nov. 22d, 1912, when she complained of pain in the lower abdomen and back. Examination revealed a retrodisplaced uterus with the fundus in the Douglas. The uterus was movable, but on attempting to replace it the promontory of the sacrum acted as an obstacle. However, it was easily replaced with a tenaculum on the anterior lip of the crevix and pressure on the corpus in the direction of the right sacroiliac synchondrosia. The patient was then fitted with a Smith-Hodge pessary and directed to return in two days. She came as directed but instead of feeling relieved as when she left the office, she was feeling badly. I examined her and found the fundus again in the Douglas. Employing the same procedure the uterus was replaced and a larger sized pessary used, but with no effect for at the end of the week the patient was back again complaining bitterly. The pessary was removed and by means of the Sims position and the use of a light vaginal tampon I tided her over the next two weeks; whenever she assumed the upright position or strained at stool the uterus became displaced. About the eleventh week the patient sent for me; I found her in much pain and examination revealed a greatly distended bladder. I catheterized her, sent her to the hospital, and the next morning an Alexander operation was performed. The round ligaments were easily found; they were thickened, easily pulled out, and of a bluish-smoky hue. The wound healed by first intention and the post-operative state was uneventful. A Smith-Hodge pessary was fitted but removed in a month as the uterus was well up in the abdominal cavity. The patient went to term, delivering herself spontaneously. An examination made six weeks postpartum found the uterus up in the normal anteverted position.

Case IV. Mrs. L, para III, was sent in to my service at the University of California Hospital complaining of inability to urinate. According to her history she was three and a half months pregnant. For the past month she had been troubled with frequent micturition. This gradually subsided but she noticed that urination was becoming difficult, and during the previous week she had to stand erect, spread her legs, and press over the lower abdomen whenever she desired to empty the bladder; since the day before she had been dribbling. Examination showed a cystic tumor in the median line of the abdomen which seemed to arise from the pelvis with its upper margin two or three fingers below the umbilicus. This tumor has been mistaken time and time again for the pregnant uterus. By passing a catheter I removed, 600 cc. of urine but did not empty the distended organ for fear of producing hemorrhage. In two hours I drew off 700 cc. more. Later under ether anesthesia a bimanual examination was made and a three and a half month incarcerated uterus was discovered. The entire Douglas was filled by the retrodisplaced uterus, the cervix being above the symphysis. It has been my experience that in cases where the Douglas is entirely filled by the uterus in such a manner as to obliterate the space, it is only a waste of time to endeavor to replace it by manual maneuvers. The uterus is held in this position by an intra-abdominal pressure so great that only operative procedure can overcome it. A laparotomy was decided upon and a median incision was made below the umbilicus, care being taken not to injure the distended bladder. The hand was introduced and with great difficulty the uterus was lifted out of the pelvis and to one side of the promontory. As it was liberated a loud sucking noise was produced by the inrush of air to fill the Douglas. A Smith-Hodge pessary was introduced to keep the uterus in its new position and the bladder was kept emptied by catheter every eight hours. Urotropin, ten grains thrice daily, was administered, and the patient kept quiet the first three days by the use of rectal suppositories each containing extracti opii, one-half grain, and extracti belladonnae, one eighth grain. She made an uneventful recovery from the laparotomy and left the hospital in fifteen days. The pessary was removed at the end of a month. This patient went to term and was delivered of an eight pound boy.

Formerly these cases were treated by inducing abortion, or by puncturing the retrodisplaced uterus through the Douglas. This procedure has been condemned because of the danger. In cases where the conditions are such that abortion is inevitable, or those where the uterus must be emptied, but which cannot be done in the ordinary way, the procedure of choice would be to empty the uterine cavity by a posterior vaginal hysterotomy.

Case V. This illustrates another clinical feature that is apt to occur in a retrodisplaced pregnant uterus if it does not terminate in abortion. Pregnancy may continue uninterrupted for a long while. This is possible by the marked upward growth of the anterior wall of the uterus, while the posterior wall retains its original position in the Douglas. By some this is termed partial incarceration, which to me is a nisnomer, and is better designated as "sacculation."

Mrs. R. age 26, para II, was sent to me because the bag of waters had ruptured and she was supposed to be in labor. The patient was hurried to the University of California Hospital where the following history was elicited: This is her second pregnancy; the first was a full term uneventful pregnancy, but labor was complicated by a profuse hemorrhage which occurred immediately after delivery. The attending physician packed the uterus without removing the placenta. On the eighth day the packing and the placenta were removed. She was in bed for fourteen days and was free from fever so far as she knows. The present pregnancy is at the twenty-sixth week of gestation. She had had urinary difficulty for the past four months with retention of urine for the last three, relieved

by catheterization twice daily by her attending physician. Constipation is very pronounced, the bowels moving only with the greatest difficulty; even walking more than a block is out of the question.

The bag of water ruptured at seven o'clock in the evening of Feb. 18th, 1912; my examination was made on the evening of the 19th. The abdomen was ovoid and the distended bladder could be plainly made out. This was emptied by the use of a soft rubber catheter which had to be introduced nearly its entire length before the bladder contents, 600 cc., could be drawn off. After the bladder and rectum were emptied vaginal examination revealed a marked bulging of the posterior fornix, which was so pronounced that the mass could be plainly seen by separating the vulva. The cervix could not at first be located, but finally by inserting the fingers with palmar surfaces behind the symphysis I made out the cervix four or five centimeters above. Reposition was out of the question and the case was seen in consultation with Drs. A. J. Lartigau and R. K. Smith. Laparotomy was decided upon and the patient prepared for a Cesarean section. A median incision was made below the umbilicus, the hand inserted and the uterus freed from the pelvic cavity with great difficulty; this was followed by an inrush of air. The overhanging promontory was found to be the obstacle. The uterus was eventrated and the abdominal cavity walled off by hot pads. Opening the uterus a six and a half months' fetus was removed, which breathed, but died the same day; the placenta was on the posterior wall. The secundines were removed and the uterus sutured after Sanger's technic. Convalescence was complicated by a colitis and a cystitis which persisted for four weeks with considerable mucus and mucous casts in the stools. The patient left the hospital on the twenty-eighth day after operation.

To recapitulate: Spontaneous reposition is the rule; if this does not occur the patient will either abort or symptoms of incarceration will develop before the end of the fourth month. In extremely rare cases the pregnancy may go to term; this can happen only if the uterus becomes sacculated.

Pregnant women who give a history of antecedent uterine trouble or who complain in the early months of urinary disturbances should be given a thorough vaginal examination. If retrodisplacement of the gravid uterus is diagnosed the procedure that I advocate is bimanual reposition of the uterus aided by traction upon the cervix and pressure on the corpus. If replacement cannot be accomplished thus it should again be attempted under ether anesthesia. After replacement a properly fitting Smith-Hodge pessary is introduced which is removed after the fourth month. If replacement is impossible one of the corrective operations for the condition should be performed, which is best done about the eleventh or twelfth week.

If symptoms of incarceration manifest themselves the rectum and the bladder should be emptied and an attempt made under ether anesthesia to replace the uterus; if this is unsuccessful a laparotomy should be performed with the object of righting the uterus to permit the pregnancy to go to term. If symptoms of infection are present however, or the case is one of inevitable abortion, the uterus should be emptied in the usual manner, and if this is found impracticable resort must be had to posterior vaginal hysterotomy.

CASE OF PELLAGRA.*

Reported by Dr. WM. WATT KERR.

Nellie H., age 44, domestic servant. Came to hospital Oct. 13, 1914, complaining of an eruption on hands and face. Until Oct. 3rd she had been perfectly well, but that morning she noticed swelling and redness of both hands and feet; there was also a feeling of numbness in the extremities. With the exception of a feeling of burning in the affected parts she felt perfectly well.

She said that on Oct. 4th blisters appeared on the hands, and that the redness increased in intensity, while on Oct. 5th the swelling had left the feet, but the eyes had begun to swell.

She had not been taking any medicine nor eating maize or corn, but had been eating rice twice a day for about a week previous to the outbreak, but attributed the skin condition to the fact that she had been using water for washing that contained a considerable quantity of lye.

When she came to the hospital ten days after the commencement of the sickness she said that for a long time she had been constipated for two or three days, and then would have an attack of diarrhea for about a week; that this took place without any relation to time of eating or quality of food, and was not accompanied by any colic pains. There was some dyspnea and palpitation on exertion, but she has not had any precordial pain, edema of the extremities, cough, night sweats or loss of weight. The temperature on admission was 99° F. in the morning, with an evening exacerbation to 101° F., and this type has been maintained ever since.

The family and hereditary history was negative. She came to this country at the age of nineteen, and has lived in Oakland and San Francisco since that time. She had the ordinary diseases of childhood, but nothing in adult life with the exception of a malarial attack eleven years ago that lasted for three months. She has had a fair appetite, used one glass of wine daily with her meals, and only took one cup of tea per day.

Physical Examination.—The patient seems to be confused mentally; asked such questions as "what church she was in," "the number of her room," etc. She had difficulty in putting on her dress, would put on the waist upside down, insisted on getting out of bed. This condition has increased, so that she has become much more irrational and restless, tears the bandages from her hands, under the impression that she is being restrained. At times she realizes her condition, cries, says she is "buggy."

Skin.—Face, except forehead, ears and neck, is of dark red color; is dry, tense and shiny, and beneath the eyes is exfoliating. Borders are fairly sharp, and are not indurated. On hands, the lesions are limited to the backs of the hands, border is sharply defined, and the coloration extends along the backs of the fingers to the first inter-phalangeal joints; it is limited at the wrist. Across the back of the left hand is an exfoliated area, seven cm. long and three cm. wide, showing bright red, tense, shiny skin beneath. Four fingers of the left hand show bullae filled with yellowish serum-like fluid. The back of the right hand and fingers show similar lesions.

The eyes are normal, with the exception of a slight amount of conjunctivitis. Ears are normal, teeth bad, tongue is red along the left edge, with some desquamation. In the neck there are a few palpable glands in the anterior chain, but the thyroid is normal.

Thorax.—At the upper portion of the thorax

* Read before the San Francisco County Medical Society, October 20, 1914.

there is an erythematous area, red, well defined and perfectly symmetrical.

There is nothing of any special significance in the heart, lungs, liver or spleen.

Smell.—She is not able to detect asafetida, but can easily perceive pleasant odors. There is no abnormality in taste. Patient feels weak, and cannot walk steadily; otherwise, with the exception of the changes in mentality already noticed, the nervous system is normal.

Examination of Eyes (by Dr. Franklin) Oct. 16, 1914.—Right eye, inferior temporal quadrant of the disc is grayish white, and the margin is blurred. Lamina is visible. Post neuritic partial atrophy. Left eye, the entire disc is hazy; vessels are surrounded by a thin sheath of connective tissue; margin is blurred; post neuritic partial optic atrophy.

The urine, feces and Wassermann reaction were all negative.

Examination of blood shows the red corpuscles diminished to two and a half millions, with hemoglobin at 65% and color index above 1%. The leuckocytes vary from 11,000 to 7,500. On one count the polymorphonuclears were 80½%, and in another they were 64%. In the high polymorphonuclear count the total lymphocytes count amounted to 17½%, and in the 64% count they amounted to 35%. There was no eosinophilia.

The particular interest of this case is its acute character, seeing it is only seventeen days since the first symptoms appeared, and the fact that the mental disturbance has been increasing rapidly during the past six to eight days. The blood condition should also be noticed, as it approximates that of pernicious anemia but leukopenia is absent. The history of long standing disturbance in the intestines is of importance from an etiologic point of view.

The patient died on November 10. The whole known course of the disease only lasting six weeks. The findings at the autopsy were entirely negative.

PACIFIC ASSOCIATION OF RAILWAY SURGEONS; IMPORTANT NOTICE OF MEETING.

The Pacific Association of Railway Surgeons will hold its annual meeting on Friday afternoon, June 25, 1915.

As the American Medical Association will be in convention in San Francisco at the same time (June 21 to June 25, inclusive) and many papers will be read in their Scientific Section, it has been decided to omit the usual Scientific Section at the Railway Surgeons' meeting this year.

Accordingly, the following program has been planned for the day: The members of the Association and their families will leave on the 1:45 p. m. Northwestern Pacific boat for a trip to Mt. Tamalpais, arriving there at about 3 p. m. Dinner will be served at 4 p. m., to be following by the President's address and the election of officers for the ensuing year. At 6 p. m. the Association will be conveyed by special train and boat to the Panama-Pacific International Exposition. One of the most enjoyable features of this trip will be the view from the bay of the night illuminations.

L. P. HOWE.

CALIFORNIA PEDIATRIC SOCIETY—NORTHERN BRANCH.

The third meeting of the California Pediatric Society—Northern Branch, will be held on Thursday evening, April 22nd, in the County Medical Library at 8:15. The program will be as follows:

I. A Study of the San Francisco Midwife based on the Board of Health Birth Registrations from August, 1913, to August, 1914. Adelaide Brown.

II. The Proper Position of Tonsillectomy in Pediatrics. Sanford Blum.

III. The Relation of Mouth and Throat Infections to Diseases in Other Parts of the Body. T. C. McCleave.

It is hoped that anyone interested in child welfare problems will come to this meeting and join the Society. We will welcome all who are really interested in any phase of child welfare work.

WILLIAM PALMER LUCAS, Secretary.

BOOK REVIEWS

The Clinics of John B. Murphy, at Mercy Hospital, Chicago. Dec., 1914. Vol. III, No. 6. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London.

Contents: The New Offices of Dr. John B. Murphy and his Staff. Murphy's Clinical Talks on Surgical and General Diagnosis. Auto-sensitized Autogenous Vaccines. Impacted Fracture of External Tuberosity of Tibia. Sarcoma of the Right Tibia. Exostosis of Interarticular Surface of Upper End of Left Tibia. Multiple Metastatic Arthritides. Cartilaginous Exostosis of Left Humerus. Bilateral Tuberculous Epididymitis with Abscess Formation. Gummatous Tumor of the Testicle. Perforating Duodenal Ulcer Fixed to the Anterior Abdominal Wall. Retroperitoneal Sarcoma of the Upper Abdomen. Filling up the Lesser Peritoneal Cavity.

Medical Gynecology. By S. Wyllis Bandler, M. D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Third Thoroughly Revised Edition. Octavo of 790 pages, with 150 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.00 net; half morocco, $6.50 net.

In the six years since this book was first published it has passed through three editions, a fact which indicates both its wide popularity among the profession and the desire of the author to keep it up to date.

The way in which the book is kept abreast of the times is best illustrated by the extended chapter on the ductless glands. Formerly this subject would not have been included in a text-book on gynecology, but at present there is good reason for doing so, for it has been clearly shown that an intimate relationship exists between several and perhaps all of these glands on the one hand and the generative organs of women on the other. As yet, few definite statements of therapeutic significance can be made regarding this relationship,

With the amount of labor which has been expended in making this the most up-to-date text-but the author mentions a number of interesting and important facts lately brought to light by clinical observations and animal experimentation. There is no doubt that as future editions appear this chapter will become more and more essential and helpful toward the treatment of a number of diseases.

The general plan of the book, its clear descriptions, its numerous illustrations and its thorough consideration of the medical treatment of gynecological diseases are already well known and require no comment. J. M. S.

Diseases of Bones and Joints. By Leonard W. Ely, M. D., Associate Professor of Surgery, Leland Stanford Junior Univ., San Francisco, Cal. Sextodecimo: 220 pages, 94 illustrations. Surgery Publishing Co., New York. Price, cloth, $2.00.

This is a modest volume of approximately one-fourth the size of the standard work of Goldthwait, Painter and Osgood, bearing the same title. As set forth in the preface, our author aims to lay down broad general principles, and to avoid a mass of detail, tending only to confuse the general practitioner for whom the work is primarily intended. In so doing, however, it would seem too much space is given to the pathology and not enough to the principles of diagnosis and treatment, the latter especially being of interest to the general practitioner.

The well-known contention of the author concerning the etiology of bone-tuberculosis—i. e., that it can occur only in synovia and red marrow—is clearly elucidated and well defended. However, Fraser of Edinburgh, in a paper read before the Orthopedic Section of the A. M. A. last year, presented logical reasons for believing that bone marrow in general and not the red variety in particular, may be the seat of the disease, thus directly opposing our author's views.

It is only through such scientific differences of opinion as these that we arrive at the truth, hence on this point alone the book has a claim to existence. The author also makes a good working classification of the large class of chronic arthritides of undetermined origin, concerning which there has always been so much confusion in the past. This classification is based upon the pathology, as is proper.

The book is profusely illustrated, and the language used is terse, simple and free from too scientific nomenclature. In general, its sins—or shall we say virtues—are only those of omission. G. J. McC.

Local and Regional Anesthesia, including Analgesia. By Carroll W. Allen, M. D., of Tulane University, New Orleans, with an introduction by Rudolph Matas, M. D., of Tulane University, New Orleans. Octavo of 625 pages with 255 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00 net; half morocco, $7.50 net.

The number of books on local anesthesia issuing from the American press marks a praiseworthy reawakening of American interest. Like not a few other procedures originating and having their early beginnings in this country, local anesthesia lay fallow until European authorities worked out and perfected methods fit for general application. The words of the prophets have had to be reintroduced to their own country in order to receive proper recognition and attention.

Allen's is the first comprehensive American treatise on this subject. In a number of chapters, especially those on the head and face, certain selected methods have received exhaustive attention, particularly those worked out by the author's teacher, Matas. They are elucidated by numerous good illustrations, taken mainly from the writings of Braun and Härtel. We regret not being able to find much more to praise in what seemed at first sight a most promising book. Most of the other chapters are less well worked out. A number of important methods have been passed by without mention—Hirschel's anesthesia for cancer of the breast, and Gros' use of anesthetic drugs in bicarbonate solution, for instance. The book is elaborate and perhaps even unnecessarily discursive within certain set limits, where the reader feels that Allen has had abundant personal experience, but it is disappointing in not giving the general oversight to be expected of so bulky and pretentious a volume.

A number of the opinions brought forward are not in keeping with modern practice; one must assume that they have been formulated more on theoretical grounds than as a result of personal trial. E. g., the author advocates blocking the larger nerves and plexus only after laying them bare: "The paraneural injection of the brachial plexus both above the clavicle and below it in the axilla, as has been recommended and practiced by some operators, but particularly in the axilla, is a far too dangerous procedure to find a place in the operative methods of conservative operators" (p. 218). This rejection of methods which in the hands of others have had so widespread a success must be regarded as a distinct step backward, and cannot proceed from sufficient personal experience and trial. To reject the subcutaneous method of brachial plexus anesthesia would take the procedure out of the hands of the general practitioner and rob it of half its usefulness.

The arrangement of the book does not seem to follow either systemic or regional anatomy, and it is difficult to find one's way about in it. Matters relating to the anesthesia of one particular nerve are scattered about in half a dozen various paragraphs.

As to style—there is none. Sentences eight or ten lines long, wanting subjects or predicates, and all sorts of grammatical errors—"achievements is," "this phenomena," "openings is"—the book bristles with them, and they make disagreeable reading enough, but mistakes like 4% B-Eucain instead of 0.4% (p. 217)—these might cost a life!

What is in the book is too valuable to be spoiled. Subsequent editions should receive thorough revision from A to Z.

The book is full of excellent illustrations, which alone make it worth having. It is well printed and bound. L. E.

A Treatise of the Nose, Throat and Ear. By William Lincoln Ballenger, M. D., Professor of Laryngology, Rhinology and Otology in the College of Physicians and Surgeons, Chicago. New (4th) edition, thoroughly revised. Octavo, 1080 pages, with 536 engravings, mostly original, and 33 plates. Cloth, $5.50 net. Lea & Febiger, Philadelphia and New York, 1914.

The fourth edition of Ballenger's text-book will serve only to increase its already great popularity.

book on Otology in the English language, Ballenger has succeeded in producing a work which has no equal in German or in English.

The main new features of the book are the chapters on the labyrinth written by Dr. J. R. Fletcher. These have been illustrated by numerous and very practical plates, showing in a diagrammatic manner the method by which nystagmus and other reactions originating from the labyrinth are formed.

Having at his disposal the various works in labyrinthine surgery and diagnosis which have recently appeared in German, he is enabled to concentrate the facts and give to the student the whole theory and practice of labyrinthine surgery in a very distinct and clear cut manner. The plates accompanying this part of the book are exceedingly ingenious, the illustrations of the Neumann labyrinth operation are better than any the reviewer has ever seen. Certain new terms such as "destructive, disharmony," have been introduced which seem superfluous but may perhaps find a permanent place in the literature.

The fronto-ethmoid operation of Mosher is described and illustrated in detail and a considerable amount of importance is attached to this very unique method of Boston's leading Rhinologist.

Such subjects as autogenous vaccines, the treatment of hay fever, the functional test of hearing, otosclerosis, steam vaporization, Haynes' operation on the cisterna magna are all thoroughly discussed. Other subjects which have recently aroused the attention; the treatment of meningitis, a good chapter on abscesses of the brain, the use of salvarsan in the treatment of syphilis, with its attending dangers to the eighth nerve, have been described and the limitations noted with great fulness.

In fact, every phase of modern rhinology and otology has been gone over with great thoroughness. It is a text-book par excellence for advanced students and specialists. H. H.

SOCIETY REPORTS

KERN COUNTY.

At the meeting of the County Medical Society (Kern County), on February 15th, among other things that came up was the matter of outside physicians doing work which properly should come under the County Physician, but on account of the size of the county, etc., was impossible until such time as they were removed to the County Hospital. Now under the County Government Act, the supervisors have not authority to pay any physician other than as a salary to the County Physician for such services. So that it was duly moved and seconded and unanimously carried, that a communication be sent to the secretary of the State Society to see if the attorney for the State Society could not draw a bill as an amendment to the County Government Act to allow a physician pay for such services to indigent patients if authorized by the County Physician or the supervisor of the district, or by any other legal means available.

The Kern County Medical Society would appreciate it if you would take it up. Also our Assemblyman from this district, I think, would introduce it in the Assembly.

Very truly yours,
Signed: C. H. MORRIS,
Chairman Committee on Legislation.

MARIN COUNTY.

At the annual meeting of the Marin County Medical Society, held January 28, 1915, at San Rafael, Cal., the following officers were elected for ensuing year, to wit:

Dr. E. J. Hund, Ross, Cal., president.

Dr. A. H. Mays, Sausalito, Cal., vice-president.

Dr. O. P. Stowe, Mill Valley, Cal., secretary-treasurer.

At a meeting of the Marin County Medical Society held at San Rafael February 11, 1915, Dr. A. S. Green of San Francisco, Cal., presented a very interesting paper on the subject of "Smith's Intra-capsular Operation for the Enucleation of Cataract." Those present were Drs. E. J. Hund, H. O. Hund, O. W. Jones, W. F. Jones, J. H. Kuser, H. O. Howitt, A. H. Mays, E. W. Alexander, R. G. Dufficy, O. P. Stowe, also Drs. Stanley and Marks, San Quentin.

O. P. STOWE, Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of January, the following meetings were held:

Section on Medicine, Tuesday, January 5th.

1. Routine Examination of the Cerebrospinal Fluid in Syphilitic Disease of the Nervous System; with recent modifications in the preparation of Lange's colloidal gold solution. T. G. Inman. Discussed by W. F. Schaller, G. F. Shiels, C. G. Snow, W. P. Lucas, H. D'A. Power and G. L. Boalt.

2. Medical Inspection of Schools in San Francisco. T. D. Maher. Discussed by W. P. Lucas and H. D'A. Power.

3. Functional Disturbances of Oesophagus. C. W. Lippman.

General Meeting, Tuesday, January 12th.

1. The Diagnosis of Chronic Interstitial Nephritis before the Development of Symptoms. Thomas Addis. Discussed by W. Ophuls and R. Bine.

2. Cholecystectomy. Lewis W. Allen. Discussed by J. Rosenstirn and F. W. Birtch.

Section on Surgery, Tuesday, January 19th.

1. Some Interesting Tumors of the Cecum. Harold Brunn. Discussed by H. C. Moffitt, S. Pope, L. Eloesser and C. W. Lippman.

2. The Prevention of Peritoneal Adhesions by the Use of Citrate of Soda Solution. A Clinical Report. Saxton Pope. Discussed by H. A. L. Ryfkogel, J. T. Watkins, H. Brunn, F. B. Carpenter and C. L. Hoag.

Section on Eye, Ear, Nose and Throat, Tuesday, January 26th.

1. Proptosis due to Orbital Hemangioma. A. S. Green. Discussed by V. Hulen.

2. Ozena of the Larynx. H. McNaught.

SACRAMENTO COUNTY.

I herewith hand you an account of the February meeting of the Sacramento Society for Medical Improvement for use in the Journal.

Regular meeting February 16, 1915, Hotel Sacramento, 8:45 P. M. President J. B. Harris in the Chair. 39 members present.

Dr J. H. Parkinson announced the death of Dr. H. L. Nichols, charter member of the society.

Dr. A. Gottschalk showed a case of Cyst of the neck.

Dr. E. C. Turner showed a case of Erythromelalgia with clinical findings

Dr. J. A. McKee reported a case of Eclampsia followed by a post partum psychosis.

Dr. G. N. Dufficy reported a case of small embryo twin adherent to placenta at normal labor.

Dr. G. A. Foster reported a case of labor without any uterine cramps.

Dr. E. M. Wilder reported a case of Lymphangitis of penis.

Dr. J. O'Brien reported a case of Axillary stab wound with severe hemorrhage and infusion of five pints of saline intravenously.

Dr. E. Pitts reported a case of pernicious anaemia with a count of 560,000 with remissions.

Dr. L. E. Farmer reported a case of fracture of skull with comminution.

Dr. E. W. Twitchell reported a case of diabetes in an infant.

Papers of the evening followed:

1. Histology and Pathology of the Uterine Support, with Especial Attention to the Round Ligaments. By S. H. Buteau, M. D., Oakland, Cal.

2. Correction of Uterine Displacements with Especial Attention to the Buteau Procedure. By C. A. Dukes, M. D., Oakland, Cal. Discussed by Drs. A. C. Hart, Henderson and White.

Lantern slide illustrations.

F. F. GUNDRUM, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held on Friday evening, January 29th, at the offices of Drs. Fitzgerald and Dozier. The following members were present: Drs. E. A. Arthur, W. F. Priestly, Minerva Goodman, J. T. Davison, W. J. Backus, B. J. Powell, S. E. Latta, C. R. Harry, H. E. Sanderson, F. P. Clark, J. D. Dameron, J. V. Craviotto, R. T. McGurk, H. Smythe, L. Dozier, W. W. Fitzgerald, H. J. Bolinger, R. B. Knight, D. R. Powell and Dr. C. L. Hoag of San Francisco as guest. The minutes of the last meeting and the financial report for 1914 were read and approved. The Committee on Admissions reported favorably on the names of Drs. J. J. Myers and J. M. Gardner of Lodi, W. F. Cothran of Tracy and C. E. Stagner of French Camp.

President McGurk announced the topic for the evening's discussion to be "A Symposium on Typhoid," and the following subjects were discussed: "Medicine in Typhoid," Dr. C. R. Harry; "Vaccine in Typhoid," Dr. W. J. Backus; "Perforation in Typhoid," Dr. J. D. Dameron; "Carriers in Typhoid," Dr. E. A. Arthur; "Laboratory Aids in Typoid," Dr. L. Dozier; "Prevention of Typhoid," Dr. W. F. Priestly; "Sequelae," Dr. J. V. Craviotto; "Blood Transfusion in Typhoid," Dr. Carl L. Hoag.

At the solicitation of Dr. Fitzgerald, the members adjourned to the Lunchette Cafe, where a very enjoyable and dream-producing German feed was partaken of.

DEWEY R. POWELL, Secretary.

SAN LUIS OBISPO COUNTY.

At the regular meeting of the San Luis Obispo County Medical Society, held on the first Saturday of December, 1914, the following officers were elected:

Dr. R. M. Bradbury, President; Dr. H. W. Jones, Secretary and Treasurer; Dr. P. K. Jackson, First Vice-President; Dr. Wm. R. Hedgpeth, Second Vice-President; and S. Helgesen, Third Vice-President.

DR. H. W. JONES, Sec'y-Treas.

SHASTA COUNTY.

At a regular meeting of the Shasta County Medical Society, held January 30, 1915, Dr. B. F. Saylor, of Redding, was elected President, and Dr. Earnest Dozier was elected Secretary and Treasurer.

EARNEST DOZIER, Sec'y-Treas.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

CANTHARIDIN.—The anhydride of cantharidic acid preparations of cantharidin are used in place of corresponding preparations of cantharides and have the advantage of being cleanly, and more uniform in strength. A 0.1 per cent. solution of cantharidin in a fixed oil raises blisters when kept in contact with the skin (Jour. A. M. A., Jan. 2, 1915, p. 53).

CANTHARIDIN, MERCK.—A non-proprietary preparation of cantharidin. Merck & Co., New York (Jour. A. M. A., Feb. 20, 1915, p. 665).

BENZENE, MEDICINAL.—A liquid consisting almost entirely of benzene, C_6H_6. Medicinal benzene has been used in the treatment of leukemia. In many cases the improvement is such as to suggest an apparent cure. A large number, if not all, cases relapse or succumb to the toxic action of the benzene. The drug is in the experimental stage and should be used with caution (Jour. A. M. A., Jan. 2, 1915, p. 54).

BENZENE, MERCK, H. P. CRYSTALLIZABLE.—A brand of medicinal benzene. Merck & Co., New York (Jour. A. M. A., Jan. 2, 1915, p. 54).

LEUCOCYTIC EXTRACT.—An extract of leucocytes obtained from exudates produced in the pleural cavity of rabbits or other animals. It is said to be of value as an aid to specific serums or antitoxins and vaccines. It is claimed to be of use itself where the nature of an infection is not known. Its use is in the experimental stage (Jour. A. M. A., Jan. 2, 1915, p. 54).

LEUCOCYTE EXTRACT, SQUIBB.—A leucoctyte extract prepared according to the method of Hiss. It is sold in syringes containing 10 cc. E. R. Squibb & Sons, New York City (Jour. A. M. A., Jan. 2, 1915, p. 54).

SILVER CITRATE, MERCK.—A brand of silver citrate admitted to New and Nonofficial Remedies. Merck & Co., New York City (Jour. A. M. A., Jan. 2, 1915, p. 54).

SILVER LACTATE, MERCK.—A brand of silver lactate admitted to New and Nonofficial Remedies. Merck & Co., New York (Jour. A. M. A., Jan. 2, 1915, p. 54).

DIGITOXIN, MERCK.—A brand of digitoxin admitted to New and Nonofficial Remedies. Merck & Co., New York (Jour. A. M. A., Jan. 2, 1915, p. 54).

LUETIN.—An extract of the killed cultures of several strains of the Treponema pallidum, the causative agent of syphilis. It is employed for the diagnosis of syphilis. It is of use in the examination of tertiary cases, but rarely gives a positive reaction in primary cases or in untreated secondary cases.

LUETIN, MULFORD.—Packages sufficient for a single test, for five tests and for fifty tests. The H. K. Mulford Co., Philadelphia (Jour. A. M. A., Jan. 23, 1915, p. 343).

GLYCOTAURO CAPSULES (half size).—Each capsule contains Glycotauro (see N. N. R.) 0.15 Gm. Hynson, Westcott & Co., Baltimore, Md. (Jour. A. M. A., Jan. 23, 1915, p. 343).

ALCRESTA IPECAC TABLETS.—Tablets containing an adsorption product of ipecac alkaloids and Fuller's earth, each tablet representing 10 grs.

of ipecac. The ipecac adsorption product is said to pass the stomach unchanged but to be decomposed in the intestine with liberation of the ipecac alkaloids and thus to exert the amebacidal action of ipecac in the body. Eli Lilly & Co., Indianapolis, Ind. (Jour. A. M. A., Feb. 13, 1915, p. 591).

TYPHOID COMBINED VACCINE (PHOPHYLACTIC).—Marketed in vials and syringes, each package containing three doses. Shieffelin & Co., New York (Jour. A. M. A., Feb. 20, 1915, p. 665).

STOMACH BITTERS.—Experiments conducted by A. J. Carlson and his co-workers at the University of Chicago show that the widespread use of bitter drugs as a means of stimulating the appetite or aiding digestion is a therapeutic fallacy. He finds that such drugs as gentian, quassia, calumba, hops, condurango and the elixir of quinine, strychnine, and iron, do not increase hunger contractions of the stomach and the related phenomenon nor induce increased secretion of hydrochloric acid or pepsin (Jour. A. M. A., Jan. 2, 1915, p. 58).

THEOBROMINE VERSUS CAFFEINE.—Lester Taylor finds that caffeine gives a moderate relief from the cardiac symptoms in myocardial insufficiency, but also causes the constant appearance of distressing nervous and gastric symptoms. He further finds that the clinical diuretic action of caffeine may be better performed by large doses of theobromine sodium salicylate, N. N. R., without the unpleasant side-effects (Arch. Int. Med., Dec., 1914, p. 769).

PURITY OF ETHER AND POSTANESTHETIC GLYCOSURIA.—Animal experiments by Ross and Hawk show that postanesthetic glycosuria is not due to impurities as has been claimed, but is brought about by a carbohydrate-free diet prior to the anesthesia. Those who claim that the U. S. P. tests for the purity of ether are insufficient, should present better evidence than they have so far done (Jour. A. M. A., Feb. 20, 1915, p. 668).

COD LIVER OIL VERSUS MILK, BUTTER AND EGGS.—Like other fats, cod liver oil is readily digested and utilized in the body. Its disagreeable taste has largely outweighed its availability as a nutriment. Recent experiments have established that the peculiar growth promoting qualities of cod liver oil are likewise possessed by butter and egg-yolk fat. There seems to be no reason, therefore, to administer the unpalatable cod liver oil (Jour. A. M. A., Feb. 20, 1915, p. 667).

COD LIVER OIL CORDIALS.—To determine if the growth promoting principle of cod liver oil is contained in the oil-less cod liver oil preparations on the market, feeding experiments have been made with some of these preparations by J. P. Street of the Connecticut Experiment Station. In these experiments it was found that the normal nutrition and growth of rats was not maintained when the fat of a standard ration was replaced by a representative amount of Hagee's Cordial of the Extract of Cod Liver Oil Compound; Vinol; Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver; and Waterbury's Compound, Plain. When, then, these animals were placed on a ration containing an equivalent amount of cod liver oil, normal nutrition and growth was soon established (Jour. A. M. A., Feb. 20, 1915, p. 638).

CITARIN.—Citarin was admitted to New and Nonofficial Remedies in 1906. The Council on Pharmacy and Chemistry held that experience had failed to demonstrate the value of Citarin as a uric acid solvent and hence directed the omission of it from New and Nonofficial Remedies (Jour. A. M. A., Feb. 20, 1915, p. 685).

RADIO-REM.—The Radio-Rem outfit is advertised by Schieffelin & Co. It is said to produce water charged with radium emanation by inserting rods stated to be coated with radium sulphate in water. Not only is the internal use of radium emanation without proved value, but the amount of emanation said to be produced by the apparatus is far below the amounts generally used by those who believe in its efficacy. It is claimed that this outfit supplies a substitute for natural mineral water; but there is no proof that the value of mineral waters depends on contained radium emanation (Jour. A. M. A., Jan. 30, 1915, p. 456).

VENARSEN.—Venarsen, marketed by the Intravenous Products Co. for the treatment of syphilis, pellagra, tuberculosis, anemia, etc., is a secret preparation. One circular suggests that Venarsen is a sort of an improved salvarsan, but in reality it gives no clew whatever as to the real character of the preparation. Another circular suggests that Venarsen is a shot-gun combination containing arsenic, mercury and other anti-syphilitic drugs. It is not only the right but the duty of physicians to know the essential composition of what they prescribe; a physician who uses a remedy the composition of which is kept secret, even in part, is not doing his duty to his profession nor to his patient. It is almost criminal for physicians to use a preparation of secret composition and to administer it by intravenous injection—a method which in itself is altogether likely to give rise to accidents (Mo. State Med. Jour., Jan., 1915).

THE HARRISON LAW A NATIONAL OBLIGATION.

Both newspaper comments and professional criticisms indicate that there is much misunderstanding of the Harrison law, which has just gone into effect. Many physicians have not fully grasped its purpose. A brief statement of the history of the law may, perhaps, be of value.

The Harrison law is not the result of any sudden spasmodic impulse on the part of Congress. It is, on the contrary, a part of a carefully considered program for the control of the traffic in habit-forming drugs and especially in opium. This movement is not confined to this country; it is international, although the United States, it is a pleasure to record, has been the leader in the movement. It has been a part of the established policy of our government since the earliest relations with China and other Oriental nations to discourage the opium traffic in the Far East. As early as 1833, a treaty with China forbade any American citizen engaging in the opium trade. In 1906, China began earnest efforts to crush out this evil. To aid her in this, the United States initiated an international movement to secure the cooperation of the leading Western nations. As a result, there met at Shanghai in February, 1909, the representatives of thirteen nations, comprising Austria-Hungary, China, France, Germany, Great Britain, Italy, Japan, the Netherlands, Persia, Portugal, Russia, Siam and the United States. This conference resulted in the establishment of the International Opium Commission, appointed to study the entire question and to submit recommendations. The next step was taken December 1, 1911, when a conference of the powers represented in the Shanghai Commission was held at the Hague. January 23, 1912, the members of the conference signed an agreement for a strict regulation of both national and international traffic in opium, morphine and cocaine. To the carrying out of the program for the restriction of habit-forming drugs, not only is our national honor pledged, but also as leaders in this movement, it is the plain

duty of our nation to initiate such legislation as may be necessary.

For the carrying out of our international obligations, three bills were drafted. The first, H. R. 1966, prohibited the importation of opium for any other than medicinal purposes. The second, H. R. 1967, prohibited the manufacture of smoking opium in the United States. Both of these bills became laws over a year ago. As there are only a few firms in the country which import opium and none which manufacture it, these laws affected a limited number of persons and so attracted little public comment. The third bill, H. R. 6282, which became a law December 17, 1914, is the Harrison law, now going into effect. In various forms and under different names it has been before Congress for nearly six years. It does not forbid the sale of habit-forming drugs. Only state laws can do that in this country. It restricts traffic in them to persons engaged in legitimate businesses in order to make it possible to trace these drugs from the importer to the ultimate consumer. The suppression of illegitimate traffic in these drugs can be accomplished only by state laws properly drawn and enforced.

The object to be attained is the world-wide restriction of the use of opium and cocain to their proper medicinal purposes. In securing this, the sympathy and support of every right-minded man and woman should be forthcoming. But physicians, especially, as those who know better than any other class the dangers and ravages of drug addictions, should endorse and support in every way this effort for the uplifting of humanity, to which our national honor is pledged.—Journal of the A. M. A.

THE PHYSICIAN AND THE HARRISON NARCOTIC LAW.

From the large number of inquiries received, it is evident that many physicians are in doubt as to what they are required to do under the Harrison law and what the law will do to them. So many misstatements on this subject have appeared that a brief summary of the purposes and requirements of the law may be reassuring.

The law affects the physician both as a prescriber and as a dispenser of drugs. The only effect it has on the former—the prescribing physician—is that it requires him to register with the collector of internal revenue of the district, and that in writing a prescription for narcotic or habit-forming drugs he must write thereon the name and address of the patient, have on the prescription his office address and his registry number, and sign his name in full. He can—and should, probably, if he has printed blanks—have his registry number printed on the blank. He need not keep either copies or records of prescriptions; this is done by the druggist. These prescriptions cannot be refilled. This is all there is to the Harrison narcotic law so far as it affects the prescribing physician. The only expense is in securing his license once a year, at a cost of one dollar. And the only facts to be kept in mind in writing prescriptions are that the patient's name and address must be written thereon and that the physician must sign his name in full —precautions, however, that should be taken on all prescriptions.

If the physician desires any of the specified drugs for his own use, he must then make out an order for them on a blank form bearing his registry number. These blanks are furnished by the Internal Revenue Department in packages of ten for ten cents. The physician cannot order drugs for his own use on a prescription blank.

If a physician is in personal attendance on a patient, he can administer any treatment he sees fit in the form of hypodermic injection, sprays, applications, etc. If he orders a nurse to give such treatment, then the written order must appear in the history sheet with the physician's initials. The statement recently appeared in a druggists' journal that an official ruling had discriminated between a visit to the patient at his home and personal treatment of a patient by a physician at his office, and that one was personal attendance and the other was not. This statement is without foundation. No such ruling has been made.

If a physician dispenses his own drugs, then he must conform to the same restrictions as a druggist. He must order the drugs specified by this law on the blanks furnished by the internal revenue collector, and he must keep a record of the dispensing of such drugs, the date, the quantity and the name and address of the person to whom they were given. This record must be kept in a "suitable blank book," and must be preserved for two years. Drugs dispensed while the physician is in personal attendance on the patient do not need to be recorded. Neither do preparations which do not contain more than 2 grains of opium, ¼ grain of morphine, ⅛ grain of heroin or 1 grain of codeine.

These provisions are simple and need cause the physician little annoyance. The great majority of physicians write prescriptions. Physicians who dispense, only occasionally dispense preparations of narcotic drugs. The restrictions for both classes are simple and easily observed. The cost for all physicians is the same, a nominal fee for registration, a small cost for order blanks. Additional rules may be found necessary as the law is enforced, but there is at present nothing that need cause physicians any inconvenience or annoyance.

But what about old habitués, persons suffering from painful and incurable diseases, and others to whom opium in some form is absolutely necessary? Every physician knows of such cases. For them the physician so long as he complies with the law of his own state can prescribe whatever he sees fit. But it must be done openly and without attempt at evasion and the physician must be ready and able at any time to justify his acts. The whole purpose of the law is to restrict the use of opium and cocaine to legitimate channels.—Journal of the A. M. A.

FEDERAL OPIUM-COCA LAW.

The following is a partial list of preparations that come within the scope of the new Federal Law and has been compiled by D. O. Haynes & Co., New York:

This law applies to the production, importation, manufacture, compounding, sale, dispensing, or giving away of Opium or Coca Leaves, their salts, derivatives or preparations.

It does not apply to preparations which contain two (2) grains or less of Opium, or ¼ grain or less of Morphia, or ⅛ grain or less of Heroin, or 1 grain or less of Codeine, or any salt or derivative of any of them in one fluid ounce; or if a solid, or semi-solid preparation, in one avoirdupois ounce.

Neither does it apply to Liniments, Ointments or other preparations which are prepared for external use only, except Liniments and other preparations which contain Cocaine or any of its salts (alpha or beta eucaine) or any of their salts or any synthetic substitute for them.

OFFICIAL PREPARATIONS EXEMPTED.

The following official preparations contain Opium, Morphine, Codeine, etc., but not in sufficient quantity to require a physician's prescription or the special order blank, when purchased or sold or when dispensed by a physician or a pharmacist:

U. S. P. PREPARATIONS.

Camphorated Tincture of Opium—1.9 grains opium in fl. ounce.
Compound Mixture of Glycyrrhiza—0.218 grain in fl. ounce.
Opium Plaster.

N. F. PREPARATIONS.

Acid Camphor Mixture—0.54 grain opium in fl. ounce.
Antiperiodic Tincture (Warburg's Tinc.)—0.114 grain opium in fl. ounce.
Carminative Mixture—Dalby's—1⅛ grains opium in fl. ounce.
Compound Elixir of Tar—0.16 grain morphine in fl. ounce.
Compound Liniment Opium.
Compound Syrup of Morphin—0.25 grain in fl. ounce.
Compound Syrup of White Pine—0.23 grain morphine in fl. ounce.
Elixir of Terpin Hydrate with Codeine—1 grain codeine in fl. ounce.
Jackson's Pectoral or Cough Syrup—0.25 grain morphine hy'd'chld in fl. ounce.
Mixture of Sassafras and Opium—1.6 grains opium in fl. ounce.
Pectoral Tincture—2 grains opium in fl. ounce.
Stokes' Expectorant—0.319 grain opium in fl. ounce.
Mixture of Magnesia and Asafetida (Dewees' Carminative)—0.456 grain opium in fl. ounce.
Troches of Morphine and Ipecac—0.7 grain in av. ounce.

OFFICIAL DRUGS AND PREPARATIONS.

Restricted by the Opium and Coca Law.

Apomorphine Hydrochloride, U. S. P.
Coca (Leaves) U. S. P.
Cocaine, U. S. P.
Cocaine Hydrochloride, U. S. P.
Codeine, U. S. P.
Codeine Phosphate, U. S. P.
Codeine Sulphate, U. S. P.
Elixir Celery Compound, N. F.
Elixir Chloroform Compound, N. F.
Elixir Coca, N. F.
Elixir Coca and Guarana, N. F.
Elixir Terpin Hydrate with Heroin, N. F.
Extract Opium, U. S. P.
Fluidextract Coca, U. S. P.
Mixture Chloroform and Cannabis Indica Compound, N. F.
Mixture Diarrhea, No. 1 (Sun Cholera), N. F.
Mixture Diarrhea, No. 2 (Squibb), N. F.
Mixture Diarrhea, No. 3 (Loomis), N. F.
Mixture Diarrhea, No. 4 (Thielmann), N. F.
Mixture Diarrhea, No. 5 (Velpeau), N. F.
Morphine, U. S. P.
Morphine Acetate, U. S. P.
Morphine Hydrochloride, U. S. P.
Morphine Sulphate, U. S. P.
Oleate Cocaine, U. S. P.
Opium, U. S. P.
Opium, denarcotized, U. S. P.
Opium, granulated, U. S. P.
Opium, powdered, U. S. P.
Pencils, Cocaine (Unna), N. F.
Pill Anti-Neuralgic, No. 1 (Gross), N. F.
Pill Anti-Neuralgic, No. 2 (Brown-Sequard), N. F.
Pill Opium, U. S. P.
Pill Opium and Camphor, N. F.
Pill Opium and Lead, N. F.
Powder, Anti-catarrh (snuff), N. F.
Powder, Chalk, Aromatic with Opium, N. F.
Powder, Ipecac and Opium (Dover), U. S. P.
Powder, Kino Compound, N. F.
Powder Morphine Compound (Tully), U. S. P.
Solution Morphine Citrate, N. F.
Solution Morphine, Hypodermic (Magendie), N. F.
Syrup Codeine, N. F.
Syrup Ipecac and Opium (Dover), N. F.
Syrup Morphine Sulphate, N. F.
Syrup Poppy, N. F.
Tincture Ipecac and Opium, U. S. P.
Tincture Kino Compound, N. F.
Tincture Opium, U. S. P.
Tincture Opium, deodorized, U. S. P.
Tincture Poppy, N. F.
Troches Glycyrrhiza and Opium, U. S. P.
Troches Morphine and Ipecac (U. S. P. 18.00).
Vinegar Opium, U. S. P.
Wine Coca, U. S. P.
Wine Coca, Aromatic, N. F.
Wine Opium, U. S. P.

DRUGS AND CHEMICALS.

Acid Meconic.
Antispasmin.
Apocodeine Alkaloid.
Apocodeine Hydrochloride.
Apomorphine Muriate Amorphous.
Apomorphine Hydrochloride, U. S. P.
Apomorphine Sulphate.
Beta-Eucaine.
Benzoyl Ecgonine.
Cocaine Alkaloid, U. S. P.
Cocaine Borate.
Cocaine Carbolate.
Cocaine Citrate.
Cocaine Hydrobromide.
Cocaine Hydrochloride.
Cocaine Lactate.
Cocaine Nitrate.
Cocaine Nitrite.
Cocaine Oleate.
Cocaine Phenate.
Cocaine Salicylate.
Cocaine Sulphate.
Cocaine Tartrate.
Codeine Alkaloid, U. S. P.
Coca Leaves.
Coca Acetate.
Coca Citrate.
Coca Hydrobromide.
Coca Hydriodide.
Coca Hydrochloride.
Coca Nitrate.
Coca Phosphate.
Coca Salicylate.
Coca Sulphate.
Coca Valerianate.
Codeonol.
Cotarnine Hydrochloride.
Diacetylmorphine Alkaloid.
Diacelylmorphine Hydrochloride.
Dover Powder.
Ecgonine.
Ecgonine Hydrochloride.
Ethylidene Chloride.
Ethylmorphine Hydrochloride (Dionin).
Ethylmorphine Hydriodide.
Ethylmorphine Eucaine.
Ethylmorphine Acetate.
Ethylmorphine Hydrochloride.
Ethylmorphine Lactate.
Eucodine.
Gregory Salt.
Heroin.
Heroin Hydrochloride.
Ipecac and Opium Powder, U. S. P.
Morphine, Alkaloid, U. S. P.
Morphine, Acetate, U. S. P.
Morphine, Anisate.
Morphine, Arsenate.

Morphine, Benzoate.
Morphine, Bimeconate solution.
Morphine, Borate.
Morphine, Camphorate.
Morphine, Citrate.
Morphine, Diacetyl (Heroin).
Morphine, Diacetyl Hydrochloride.
Morphine, Ferrocyanide.
Morphine, Formate.
Morphine, Hydriodide.
Morphine, Hydrobromide.
Morphine, Hydrochloride, U. S. P.
Morphine, Hypophosphite.
Morphine, Lactate.
Morphine, Meconate.
Morphine, Nitrate.
Morphine, Oleate 2%.
Morphine, Oleate solution 20%.
Morphine, Phosphate.
Morphine, Phthalate.
Morphine, Salicylate.
Morphine, Sulphate.
Morphine, Tannate.
Morphine, Tartrate.
Morphine, Valerate.
Narceine, Alkaloid.
Narceine, Acetate.
Narceine, Hydrobromide.
Narceine, Hydrochloride.
Narceine, Meconate.
Narceine, Nitrate.
Narceine, Salicylate.
Narceine, Sulphate.
Narceine, Valerianate.
Narcotine, Alkaloid.
Narcotine, Hydrochloride.
Narcotine, Sulphate.
Opium, Gum, U. S. P.
Opium, Deodorized, U. S. P. Denarcotized.
Opium, Granulated, U. S. P.
Opium, Extract Powder, U. S. P.
Opium, Powder, U. S. P.
Opium, Tincture, U. S. P.
Opium, Vinegar, U. S. P.
Opium, Wine, U. S. P.
Papaverine, Alkaloid.
Papaverine, Hydrochloride.
Papaverine, Nitrate.
Papaverine, Phosphate.
Papaverine, Sulphate.
Peronin.
Protopine.
Stypticin (Cotarnine Hydrochloride).
Styptol (Cotarnine Phthalate).
Thebaine Hydrochloride.
Thebaine Tartrate.
Tropacocaine Hydrochloride.

AMPOULES.

Clin's Ampoules—see list E. Fougera & Co.
Cocaine Hydrochloride (Lilly).
Codrenin ℞ "C" (P. D. & Co.).
Eudrenin ℞ "B" (P. D. & C.).
Morphine and Atrophine, all strengths (Lilly) (P. D. & Co.).
Morphine and Hyoscine (Lilly) (P. D. & Co.).
Morphine Sulph., all strengths (Lilly).

CAPSULES.

Bronchial No. 1 (Lilly).

CONFECTIONS.

Opium.
Theriac (H. B. & W.).

CORDIALS.

Calisaya, Ferrated (Lilly).
Coca.
Celery Comp. (S. & D.).
Diarrhea (Milliken).
Kaol Comp. (Norwich).

ELIXIRS.

Ammonium Valerianate and Morphine.
Antiasthmatic Comp.—Blackwood.
Celery Comp.
Celery and Black Haw.
Celery, Kola and Coca Comp.
Celery and Kola Comp.
Chloroform, Comp., N. F.
Coca.
Coca Compound.
Creosote Compound.
Creosote and Terpin Hydrate, Compound.
Diacarpine (Norwich).
Glycerin and Heroin Compound.
Gold Chloride (Norwich).
Gold Chloride no Atropine (Norwich).
Heroin.
Heroin, Comp. No. 1, No. 2.
Heroin and Pilocarpine Comp.
Heroin and Terpin Hydrate.
Kola Comp.
Kola and Celery Comp.
Morphine Aromatic.
Morphine Hydrochloride.
Morphine Valerianate.
Opium, Deodorized.
Pectoral, or Pulmonic.
Pertussic Comp. (Wampole).
Pilocarpine Comp.
Poppy Comp. ℞1 and ℞2.
Saw Palmetto Comp.
Saw Palmetto and Pichi, Comp.
Sedative.
Terpin Creosote Comp.
Terpin Hydrate and Codeine.
Terpin Hydrate with Heroin.

EXTRACTS.

Coca.
Opium, U. S. P.
Opium Aqueous (Milliken).
Poppy Heads.
Warburg's Tincture.
Warburg's Tincture, without Aloes.

EYE OINTMENTS AND COLLYRES.

Tolocaine Hydrochloride (Lilly).
Clin's Collyres—see list E. Fougera & Co.

FLUIDEXTRACTS.

Celery Comp. (Upjohn).
Coca, U. S. P.
Coca and Celery.
Coca, Soluble.
Ipecac and Opium.
Kola, Compound.
Opium.
Opium, Camphorated.
Opium, Concentrated.
Opium, Deodorized (see Tinctures).
Poppy Heads.
Saw Palmetto, Comp.
White Pine Comp. for Syrups.
White Pine Comp., Red, for Syrups.
Wild Cherry, Compound.

HOMEOPATHIC REMEDIES.

Boericke & Runyon's List.

Apomorphia, 1x, 2x, 3x, in any form.
Erythroxylon Coca, Tinct., and all potencies.
Herion, 1x, 2x, 3x, in any form.
Morphia sulph., 1x, 2x, 3x, in any form.
Opium Tinct., 1x, 2x, in any form.
Tablets, Codein 1/25 gr. 1/10 gr. 1/8 gr. 1/5 gr. 1/4 gr. 1/2 gr. 1 gr. Heroin, 1/24 gr. 1/12 gr. Morphia sulph. 1/10 gr. 1/8 gr. 1/6 gr. 1/4 gr. Tablet No. 30, 31, 35, 105, 111, 118, 133, 142, 143, 144, 157, 159, 162, 163, 182, 201, 208, 221.
Specialties—
Elixir Heroin and Terpin Hydrate.
Coca Wine.

LOZENGES AND COMPRESSED LOZENGES.

Bronchitis Improved (Norwich).
Brown Mixture.
Brown Mixture Comp.
Brown Mixture and Ammonium Chloride.
Cocaine Compound.
Cocaine and Cubeb Comp.
Follicular Tonsilitis No. 3.
Glycyrrhiza and Opium, U. S. P.
Jackson's Ammonium.
Jackson's Pectoral.
Licorice and Anise Comp.
Licorice and Opium, U. S. P.
Mentholic Throat.
Menthol and Cocaine Comp.
Morphine and Ipecac (H. B. & W.).
Oral Astringent (P. D. & Co.).
Red Gum Compound.
Thymo Heroin Comp.
White Pine Comp. Cough.
Wistar's Cough.
Wild Cherry Comp.

John F. Hancock & Son's List.

Acetanodeine.
Acid, Boric Comp.
Aconite Compound.
Ammonium-Codeine.
Ammonium Iodide Comp.
Antalgic.
Camphor Compound.
Chlorodyne.
Cocaine 1/20 gr. 1/10 gr.
Cocaine Compound.
Cocaine and Cubeb.
Cocaine and Opium.
Cocaine and Rhatany.
Cocanilid.
Codeine 1/10 gr. 1/5 gr.
Cubeb Compound.
Heroin No. 1 1/24 gr. No. 2 1/12 gr.
Heroin Compound.
Lobelia Compound.
Muco-Sedative.
Muco Stimulant.
Rhatany and Opium.
Sedative, S.
Terpin-Heroin-Benzoic.

OLEATES.

Cocaine, U. S. P.
Mercury and Morphine (Squibb).
Morphine, 10%.

PILLS AND GRANULES.

Acetanilide and Quinine Comp.
Acetphenetidin and Quinine Comp.
Alterative.
Ammonium Muriate, Comp.
Anodyne.
Anodyne Granules (Norwich).
Antispasmodic.
Anti-Syphilitic Nos. 1 and 2—Castano.
Aphrodisiac Improved.
Aphrodisiac Comp (P. D. & Co.).
Astringent (Upjohn).
Atropine and Morphine B, C, D (Upjohn).
Blue Mass Compound.
Calomel and Opium.
Camphor Compound.
Camphor and Opium N. F. No. 1 and No. 2.
Camphor, Opium and Hyoscyamus.
Camphor, Opium and Lead Acetate.
Camphor, Opium and Tannin.
Chanteud's Granules—see list of E. Fougera & Co.
Chlorodyne.
Chlorodyne, half strength.
Chronic Dysentery—Holston.
Coca and Phosphorus, Comp.
Coca. Phosphorus and Strychnine.
Cocaine Hydrochloride (all sizes).
Codeine (all sizes).
Codeine Sulphate (all sizes).
Codeine Sulphate Metric Granules (Norwich).
Colax.
Cold, Laxative (Upjohn).
Diaphoretic.
Diarrhea Pellets.
Dover Powder.
Dysmenorrhea—Brooks.
Dysmenorrhea—Alvord.
Heims.
Heroin (all sizes).
Hydrargyrum Comp. No. 1.
Ipecac and Opium (all sizes).
Ipecac and Opium Comp.
Ipecac and Squill B. P.
Mercury Iodide and Opium—Ricord.
Mercury Protiodide and Opium.
Mercury and Chalk No. 2.
Mercury Yellow Iodide and Opium.
Morphatropia (all sizes).
Morphine Acetate ⅛ gr. ¼ gr.
Morphine and Atropine No. 1, No. 2 and No. 4
Morphine Hydrochloride ⅛ gr.
Morphine and Belladonna No. 1.
Morphine Sulphate (all sizes).
Morphine Valerianate (all sizes).
Neuralgic, Brown-Sequard, N. F.
Neuralgic, Brown-Sequard, half and quarter strength.
Neuralgic, Gross, N. F.
Neuralgic, Gross, half strength.
Neuralgic, Gross, Pink Granules.
Opium and Bismuth.
Opium, Camphor and Lead Acetate.
Opium Extract (all sizes).
Opium U. S. P., 1 gr. ½ gr.
Opium, Powdered (all sizes).
Opium with Soap.
Opium and Camphor, N. F.
Opium, Camphor and Tannin (Wampole).
Opium and Lead, N. F. (all sizes).
Opium and Silver Nitrate No. 1 and No. 2.
Opium, Tannin and Lead.
Phenacetine and Quinine Comp.
Quinine and Dover's Powder.
Sedative—Mann.
Silver Nitrate and Opium.
Syphilitic, Ricord, Modified.
Terpin Hydrate and Codeine No. 1 and No. 2.
Warburg's Tincture B2.
Warburg's Tincture (without Aloes) B4.

POWDERS.

Brown Mixture.
Chalk Aromatic with Opium, N. F.
Diaphoretic—Beach's.
Ipecac and Opium (Dover), U. S. P.
Ipecac and Opium Camphorated.
Morphine Compound (Tully's), U. S. P.
Tinct. Poppy Compound.
Tully's Modified.

SOLUTIONS.

Chlorodyne (5717).
Cocaine Hydrochloride, 2% with Acetoform.
Cocaine Hydrochloride, 4% with Acetoform.
Morphine Citrate.
Morphine Hypodermic.

SUPPOSITORIES.

Sharp & Dohme's List.

Cacao Butter Aural No. 162J.
Rectal—
No. 1A to No. 11A incl.
No. 15A to No. 23A incl.
No. 24B.
No. 31A, No. 32A, No. 33A, No. 39A, No. 40A
No. 41A, No. 42A.

Norwich Pharmacal Co.'s List.

Morphine and Atropine.

Opium 1 gr. 2 gr.
Opium and Belladonna.
Opium and Hyoscyamus.
Morphine Sulphate ⅛ gr.
Unguentine Cones with Opium.

SYRUPS.

Anodyne Pine Comp. with Heroin.
Balm Gilead Comp. (Norwich).
Balm with Heroin (Norwich).
Blood Root and Cherry Compound No. 2 (Norwich).
Blood Root with Diacetylmorphine Hydrochloride (Upjohn).
Blood Root with Heroin Hydrochloride (Upjohn).
Cocillana Comp.
Codeine (Squibb).
Dover Powder, N. F.
Eubenol-Dionin (Norwich).
Heroin Compound.
Heroin and Glycerine Comp.
Heroin and Sanguinaria Comp.
Heroin Comp. Mentholated.
Heroin and Tolu Comp.
Ipecac and Opium (Dover), N. F.
Palmo-Dionin (Upjohn).
Pinus Alba Comp.
Sedative Comp. (Norwich).
Terbene Compound.
Terbene with Dionin (Norwich).
Terbene with Heroin, Tolu and Cannabis Comp. (Norwich).
Terbene Aromatic with Heroin.
Tolu Compound.
Tolu and Heroin Compound.
White Pine Compound.
White Pine with Heroin.
White Pine Terpin Hydrate and Heroin.
White Pine with Heroin and Ammonia Muriate.
Wild Cherry Compound.
Wild Cherries and Terbene Comp. with Heroin (Norwich).
Wild Cherry and Heroin (Milliken).

TABLETS AND TABLET TRITURATES.

Acetanilide Compound Nos. 5 and 7.
Acetanilide and Tully's (Norwich).
Acetanilide Comp. with Codeine No. 1.
Acetanilide Comp. with Heroin.
Acetanilide and Quinine Compound.
Acetanilide Salicylate and Morphine Nos. 2 and 3.
Acetanilide and Sodium Comp. with Codeine.
Acetanilide and Sodium Comp. with Heroin.
Acetanilide and Sodium Salicylate Comp.
Acetanilide with Codeine Nos. 26 and 216 (Upjohn).
Aconite Compound.
Alkaloid Codeine (Lambert & Lowman).
Ammonium Chloride Comp. with Codeine.
Ammonium Chloride Comp. with Diacetylmorphine.
Ammonium Chloride Comp. with Heroin.
Ammonium Muriate Comp. with Codeine.
Ammonium Muriate Comp. with Heroin.
Ammonium Salicylate Comp. Nos. 1 and 3.
Ammonium Salicylate and Acetanilide Comp. ½ strength.
Alum Comp. No. 1 for injections.
Alum Compound No. 2.
Anodyne Comp. with Codeine.
Anodyne Nos. 1 and 2.
Anodyne Expectorant—Bolton.
Anodyne Expectorant No. 2.
Anodyne Infant—Waugh.
Anodyne (Lilly).
Anodyne, Mild.
Analgia Comp. with Codeine.
Analgesic Compound.
Analgesic Comp. and Heroin.
Analgesic Comp. with Sodium Salicylate and Codeine (Wampole).
Antiasthmatic—Stevens.
Antibronchitis.
Anticold.
Anticold No. 3—Averill.
Anticold, Gordon.
Antidiabetic Nos. 1 and 2.
Antilupia and Codeine (Norwich).
Antipyrine and Heroin Comp. (Squibb).
Antisyphilitic No. 2 (Upjohn).
Antivomiting Nos. 1 and 2.
Apomorphine Hydrochloride (all sizes).
Aspirin Compound—Kyle.
Aspirin and Codeine.
Astringent Wash.
Atropine-Aconite Comp.
Bismuth Catechu Comp.
Bismuth and Ipecac Nos. 1 and 2.
Bismuth and Opium.
Bismuth and Paregoric Comp.
Bismuth, Opium and Carbolic Acid.
Bismuth, Opium and Phenol (Milliken).
Bismuth and Salol Compound.
Bismuth, Subnitrate, Opium and Carb. Acid.
Blue Mass Compound.
Boric Acid and Potassium Comp.
Bromides Compound.
Bromides Compound ½ strength.
Bromide Compound Nos. 1 and 2—Hubbard.
Bronchitis.
Bronchitis—Delafield.
Bronchitis, Improved.
Bronchitis, No. 3.
Brown Mixture (all sizes).
Brown Mixture Compound.
Brown Mixture and Ammonium Chloride Nos. 1 and 2.
Brown Mixture Comp. modified with Heroin.
Caffocodeine (Fraser).
Caffocodeine Compound (Fraser).
Calomel and Dover Powder (all sizes).
Calomel and Opium Nos. 1 and 2.
Camphor, Opium and Tannin.
Cannabis and Aconite Comp.
Cannabis and Codeine.
Cardiac Asthma.
Cardiac, Waldstein.
Carminative No. 2.
Chlorodyne.
Chlorodyne, half strength.
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Cocaine.
Cocaine Hydrochloride (all sizes).
Cocaine Hydrochloride, 1⅛ gr. for solution (Upjohn).
Cocaine and Cubeb Compound.
Cocaine without sugar (all sizes).
Codeine (all sizes).
Codeine Alkaloid (all sizes).
Codeine Phosphate (all sizes).
Codeine Sulphate (all sizes).
Colax.
Cold Nos. 1 to 6 incl.
Cold, Gage.
Cold, No. 3.
Cold, No. 3 with Aloin.
Cold, Laxative.
Cold, Laxative, R "C" (P. D. & Co.).
Cold, Preferred.
Colic Nos. 1 and 2 Infantile.
Copper and Opium.
Coryza Nos. 1 to 6 incl. (see Note).
Coryza—Bishop—Kenyon—Richards—Smith.
Coryza, Improved.
Coryza, Hospital.
Coryza with Heroin.
Cough Nos. 1 and 2.
Cough No. 3—Lyon.

NOTE.—Parke, Davis & Co. announce that their Coryza Tablets—C. T. 243; C. C. T. 65; T. T. 722; C. C. T. 66, and C. C. T. 376, do not contain any opiate. Examine the label!

Cough—Drossner—Goodwin.
Cough, Infant.
Cough, Adult.
Cough, Palliative (P. D. & Co.).
Cough, persistent with Diacetylmorphine.
Cough, persistent with Heroin.
Creosote Compound.
Croup No. 2.
Croup, Spasmodic.
Damiana Comp. No. 2 (Milliken).
Diabetes.
Diacetylmorphine (all sizes).
Diacetylmorphine Hydrochloride (all sizes),
Diaphoretic—Whitford.
Diarrhea.
Diarrhea, Fermentative.
Diarrhea, Nos. 1, 2 and 9.
Diarrhea, No. 3—Sullivan.
Diarrhea, No. 4—Gay.
Digitalis Compound No. 1.
Dionin (all sizes).
Dover Compound—Terryberry.
Dover Powder (all sizes).
Dover Powder and Quinine (P. D. & Co.).
Enteric—Sillo.
Enteritis—Haskell.
Expectorant—Rankin—Harvey.
Expectorant, Nos. 4 and 5—Jones.
Expectorant, No. 6.
Expectorant, Tonic.
Febrifuge.
Fever.
Fever—Kenyon.
Follicular Tonsilitis.
Gastric Sedative.
Gastritis.
Gastritis No. 1—Pepper.
Grip Special (Fraser).
Grippe No. 1—Becker.
Grippe No. 2—Drake—Quigley.
Grippe No. 3.
Headache Neuralgia—Rodgers.
Helonias Compound, Vaginal.
Hemostatic.
Heroin (all sizes).
Heroin Compound (all sizes).
Heroin Hydrochloride (all sizes).
Heroin and Terpin Hydrate (all sizes).
Hydrastine Compound.
Hydrastine white Alkaloid Comp.
Hyoscyamus Cough.
Hysteria.
Injection Compound No. 2 (Wampole).
Ipecac and Opium, see Dover Powder.
Krameria Compound.
Laxative Cold No. 2.
Lead and Laudanum.
Lead and Opium.
Leucorrhea (Helonias Astringent).
Leucorrhea, Mild (Helonias Astringent).
Mercurous Iodide and Opium Nos. 1 and 2.
Mercury and Opium.
Mercury Protiodide and Opium.
Mercury with Chalk and Dover Powder.
Mercury with Chalk and Dover Powder ℞ "B" (P. D. & Co.).
Morphine Acetate (all sizes).
Morphine Bromide Compound.
Morphine Bromide No. 2.
Morphine Hydrochloride (all sizes).
Morphine and Salicylic Acid Nos. 1 and 2.
Morphine Sulphate (all sizes).
Morphine and Atropine (all sizes).
Morphine and Atropine (all combinations).
Morphine and Belladonna.
Naso-Pharyngeal.
Nausea, Pl.
Nausea, No. 2 and No. 4.
Neuralgic—Arthur.
Neuralgic—Brown-Sequard.
Neuralgic—Brown-Sequard, ½ strength.
Neuralgic—Dunlap.
Neuralgic—Gross.
Neuralgic—Gross, ½ strength.
Neuralgic Headache—Myers.
Neuralgic No. 10—Thrush.
Opium, Camphor and Tannin.
Opium, Camphor and Ammonium Carb.
Opium, Camphor and Lead Acetate.
Opium, Camphorated, Tinct. (all sizes).
Opium Deodorized, Tinct.
Opium Powdered (all sizes).
Opium Tinct., U. S. P. (all sizes).
Opium and Camphor.
Opium and Camphor ℞ "B" (P. D. & Co.).
Opium and Hyoscyamus.
Opium and Ipecac Compound.
Opium, Ipecac and Blue Mass.
Opium and Lead.
Paragoric Compound.
Paragoric, U. S. P. equivalent to 5 and 10 min.
Phenacetin Compound.
Phenacetin and Quinine Compound.
Pinus Alba Compound.
Potassium Chlorate and Cocaine.
Quinine and Dover Powder.
Rheumatism Nos. 1 and 3.
Rheumatism, Improved.
Rheumatism—Liggett.
Salcetol Compound (Stoddard).
Salcetol Codeia (Stoddard).
Salicylate Acid and Morphine Nos. 1 and 2.
Salmacrin (Weaver).
Salol Compound (all sizes).
Sanguinaria Compound (Stoddard).
Sanguinaria Comp. and Codeine (Norwich).
Sciatica Improved (Norwich).
Sun Cholera.
Syphilitic.
Syphilitic ℞ "A".
Tartar Emetic and Morphine—Hall.
Terpin-Hydrate Compound—Brockbank.
Terpin and Creosote Comp. No. 2.
Terpin Diacetylmorphine No. 2 (Upjohn).
Terpin and Heroin Nos. 1 and 2.
Terpin and Codeine (all sizes).
Terpin and Heroin Comp. (P. D. & Co.).
Throat Mentholated.
Throat—Quinlan.
Tully's Powder (all sizes).
Uterine Astringent and Antiseptic.
Voice.
Warburg's Tincture No. 1.
Warburg's Tincture No. 2 without Aloes.
White Pine Compound.
Whooping Cough No. 3 (Wampole).
Whooping Cough No. 4.
Whooping Cough Improved (Norwich).

TABLETS—DISPENSARY.

Cocaine.
Cocaine Hydrochloride (all sizes).
Codeine (all sizes).
Codeine Alkaloid.
Codeine Phosphate (all sizes).
Codeine Sulphate (all sizes).
Heroin Hydrochloride (all sizes).
Morphine Hydrochloride.
Morphine Sulphate (all sizes).

TABLETS—HYPODERMIC.

Adrenalin and Cocaine.
Adrenalin ℞ "B" "C" "D" (P. D. & Co.).
Adrenalin and Eucaine ℞ "B" (P. D. & Co.).
Antiasthmatic, Timmerman.
Apomorphine Hydrochloride (all sizes).
Apomorphine and Strychnine.
Cardiac No. 2 (Norwich).
Cocaine Hydrochloride (all sizes).
Codeine Phosphate (all sizes).
Codeine Phosphate no sugar (all sizes).
Codeine Salts and all combinations.

Codeine Sulphate (all sizes).
Diacetylmorphine Hydrochloride (all sizes).
Eserine and Morphine.
Eucaine Hydrochloride (all sizes).
Eucaine Lactate.
Heroin Hydrochloride (all sizes).
Heroin Salts and all combinations.
Hubbard's Bromides Nos. 1 and 2 (Squibb).
Hyoscine Comp.
Hyoscine and Morphine (P. D. & Co.).
Hyoscine and Morphine Bromide Comp.
Hyoscine and Morphine Brom. Comp. ½ strength.
Local Anesthetic, Dental (all sizes).
Morphine Bimeconate.
Morphine and Cactin (Milliken).
Morphine Comp. Nos. 3, 9, 10, 11, 18 (Wampole).
Morphine Hydrochloride (all sizes).
Morphine and Hyoscine.
Morphine Meconate (all sizes).
Morphine Nitrate (all sizes).
Morphine and Strychnine.
Morphine Salts and all combinations.
Morphine Sulphate (all sizes).
Morphine and Atropine (all sizes).
Morphine, Atropine and Strychnine (all sizes).
Morphine and Strychnine (all sizes).
Morphine Sulphate (Fraser).
Morphine Sulphine and Atropine Sulphate (Fraser).
Morphine Compound—Tupper.
Nitroglycerin Comp. (Lilly).
Nitroglycerin, Strychnine and Morphine.
Scopolamine and Morphine (all sizes).
Scopolamine Morphine Comp. (P. D. & Co.).

TABLETS—OPHTHALMIC.

Cocaine Hydrochloride.

TABLETS—VAGINAL.

Leucorrhea, Improved (Lilly).
Morphine and Belladona.
Uterine Compound (Lilly).
Vaginal Astringent No. 2 (Norwich).
Vaginal Astringent No. 1, No. 2 (Wampole).

TABLETS—VETERINARY HYPO.

Cocaine Hydrochloride (all sizes).
Codrenin (P. D. & Co.).
Colic—Knowles.
Morphine Sulphate (all sizes).
Morphine and Atropine (all sizes).
Morphine and Hyoscine (P. D. & Co.).

TINCTURES.

Bateman's Drops (Upjohn).
Coca Leaves.
Ipecac and Opium, U. S. P., 8th Revision.
Kino Comp. (Squibb).
Opium Acetic.
Opium U. S. P.
Opium Camphorated, U. S. P.
Opium Comp., N. F.
Opium Comp. (Squibb's Mixture).
Opium, Denarcotized.
Opium, Deodorized, U. S. P.
Opium. Pectoral.
N. T. Erythroxylon (Coca).
Warburg's Tincture, N. F.
Warburg's with Aloes.

WINES.

Coca, U. S. P.
Coca, Aromatic, N. F.
Coca and Beef.
Coca, Beef and Iron.
Coca and Celery.
Coca and Hypophosphites (Lilly).
Coca and Phosphorus Comp. (Merrell).
Kola Compound.
Opium, U. S. P.

SPECIALTIES AND PROPRIETARIES.

Adrenalin Compound Suppositories.
Adrenalin and Cocaine Tablets,
Adrenalin ℞ "B" "C" "D".
Adrenalin Eucaine ℞ "B".
Apii Compound (Hammond).
Antigia Powder & Tablets.
Antigia and Codeine.
Antigia and Quinine.
Battley's Liquor Opii Sedativus.
Bechol with Heroin.
Bronchoids.
Bronchial Sedative, Palmer.
Browne's Chlorodyne.
Brown's (Dr. George) Eye Drops.
Brown's Cough Syrup.
Brown's Laryngial Gargle.
Brown's Throat Lozenges.
Cannabis Comp., Merrill.
Capsodyne.
Cerebral Sedative Comp.
Chloro-Cannabine.
Chlor-Anodyne.
Chlorodyne, Morphine sulph.
Chlorodyne, American—S. & D.
Chlorodyne, Chandler's Modified.
Chlorodyne, Chandler's.
Chlorodylina.
Cholera Mixture—Shoemaker's.
Codeonal—Knoll.
Codrenin ℞ "A," "B," "C."
Codrenin Ampoules ℞ "C."
Creo-Pin.
Creosote Comp.
Cuanha Comp.
Eudrenin Ampoules ℞ "B."
Expectorant Wafers—Merrill.
Foutz's Certain Kolik Remedy.
Glycerite Heroin.
Glycerin Heroin Comp.
Glycerite Heroin Comp.
Glycerole Heroin Comp.
Glycerole Heroin and Terpin Hydrate.
Glyceroin.
Glyco Creosote.
Glyco-Heroin.
Glyco-Pin.
Glyco-Terpin.
Gonorrhea Treatment.
Herobalm.
Horoglypine
Heroin Sedative Comp.
Herokal.
Herolyptus.
Heropine.
Heroton.
Herotone Tablets.
Hypnotic Comp.
Iodo Codeine.
Ichthytannic Suppositories.
Lactu Heroin.
Lactu Heroin Modified.
Linctus Comp.
Liquor Paverine.
Locathesia.
Mead's Terpo-Dionin.
Morphol.
Nebulol Nos. 41 and 47 (Upjohn).
Ocusal "B."
Palmettine.
Palmo-Dionin (Upjohn).
Pantopon.
Pantopon Scopolamine.
Paracodin—Knoll.
Pinosa.
Pixine Colic Cure.
Pruni-Heroin.
Rami Drops.
Sangui Heroin.
Sedapine.
Stricture Crayons.
Styptol—Knoll.
Syr. Heropliga.

Syr. Terbenol Aromatic and Heroin.
Terpinine.
Terpinola.
Terpo-Dionin—Mead's.
Unguentine Cones with Opium.
" Crayons.
" Crayons with Protargol.

E. FOUGERA & CO.'s LIST.

Battley's Liquor Opii Sedativus (Opium).
Browne's Chlorodyne (Opium).
Chanteaud's Granules.
No. 64 (Cocaine).
No. 65 (Cocaine Chlorhydrate).
No. 66, 123, 14 (Codeine).
No. 102, 11, 15, 21 (Gregory Salt).
No. 46 (Apomorphine).
No. 90 (Morphine Bromhydrate).
No. 10 (Morphine Chlorhydrate) regular No. 10 has no Morphine.
No. 91, 9 (Morphine Chlorhydrate).
No. 25 (Bromhydrate).
No. 93 (Narceine).
Clin's Collyres:—
No. 400, 401 (Dionine).
No. 402, 403 (Stovaine).
No. 390, 391, 438, 439, 642, 647, 646 (Cocaine Chlorhydrate).
Clin's Ampoules for Hypo. Injections:—
No. 236, 237, 238 (Cocaine Chlorhydrate).
No. 207 (Apomorphine).
No. 293, 294, 212, 369 (Morphine Chlorhydrate).
No. 511, 206, 221 (Cocaine).
No. 355, 356, 661, 336 (Eucaine B).
No. 356 (Cocaine Chlorhydrate).
No. 261 (Heroin).
No. 593 (Morphine).
No. 548 (Morphine Sulphate).
No. 374, 297 (Morphine Chlorhydrate).
No. 346, 347, 315, 636 (Stovaine).
Rami Drops (Codeine).

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Uncle Sam Breakfast Food Co., Omaha, Nebr.; No. 36.
Welch Grape Juice Company, Westfield, N. Y.; Nos. 93, 94.

CLINICAL LABORATORIES.

Pacific-Wassermann Laboratories, Pacific Bldg., San Francisco; No. 45.

APPARATUS, INSTRUMENTS, AND FURNITURE.

Ambulatory Pneumatic Splint Mfg. Co., 30 Randolph St., Chicago; Nos. 83 and 86.
Betz Company, Frank S., Hammond, Indiana; Nos. 104, 105, 106.
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Scheidel-Western X-Ray Co., 737 W. Van Buren St., Chicago; Nos. 99, 100, 101, 102 and 103.
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Wappler Electric Controller Co., 175 East 87th St., New York City; Nos. 42, 52.

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Fairchild Brothers & Foster, Fairchild Bldg., New York City; No. 45.
Laekenbach, Fred I., 908 Butler Bldg., San Francisco, Calif.; No. 6.
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Schering & Glatz, 150 Maiden Lane, New York City; No. 38.
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The Oaks Sanitarium, Los Gatos, Calif.; No. 81.
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DR. CARREL'S WORK IN FRANCE.

Miss Katharine Lilly, head nurse of the Department of Surgery of the Rockefeller Institute for Medical Research, has gone with a detachment of

nurses being sent by the American Red Cross to the American hospital at Yvetot.

Miss Lilly herself is going to France for the especial purpose of assisting Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research. Dr. Carrel now has been detached from work at the Lyons hospital and placed by the French Government in charge of a hospital at Compeigne, which is near the northern line of battle.

For the use of the patients in charge of Dr. Carrel and his assistants, the Government has requisitioned a hotel which has been converted into a hospital with accommodations for about one hundred persons. The Government will provide administrative officers as well as competent surgeons suggested by Dr. Carrel, to carry on the regular work, thus leaving Dr. Carrel free to perform his characteristic operations, especially in the line of transplanting tissues, blood vessels and nerves, and blood transfusion, and to conduct the laboratory studies which are about to be undertaken.

In order that the work under Dr. Carrel may not only be of the greatest effectiveness at the moment, but may be made permanently available to the world of science, the Rockefeller Institute is equipping Dr. Carrel's hospital with complete apparatus for research in the bacteriological, pathological, chemical and surgical conditions which may arise.

Dr. Carrel, who was spending his vacation in France at the outbreak of the War, immediately offered his services to the French Government, which were accepted. He was detailed to the military hospital at Lyons, at which there were referred to him especially the wounded with injured blood vessels and nerves, in view of the research work which he had done in these classes of injuries. From the application of the method which he discovered for suturing and transplanting blood vessels and tissue, it was possible to save limbs which otherwise would have inevitably been lost. Dr. Carrel has now been given special facilities as near as possible to the line of battle, because of the unusual conditions which have developed in this conflict incident to trench warfare.

It had been supposed that all future wars would yield small numbers of infected wounds. The facts, however, are that no previous war has yielded such a large number of infected wounds as the present one.

The reasons for this under the old conditions are developed to be as follows: poor hygienic facilities, infection of the wounds caused by the surgeons who carried the infecting germs on the operating instruments, dressings, etc., the introduction of infected material from without at the time of injury, were the sources of infection. In the present case the infections occur because the injured in trenches receive their injuries from missiles which carry dirt and soiled clothing into wounds; and also because in many cases it is days before the injured can be removed. The infections have also been of an unusual character. Formerly they were usually suppuration and pus formation. Now they are commonly due to the development of gas in the tissues and to tetanus, or lock-jaw.

This gas infection is very serious in form. It originates in bacteria of the soil, particularly soil which has been under a high state of cultivation for a long period of years. The technological term applied to the condition is gaseous phlegmon. The bacteria which cause it do not grow except in the absence of atmospheric air which the injured tissues provide. In their growth they break up the constituents of the tissues and impart a gas in which hydrogen forms a large part. This gas penetrates the tissues and carries the infected material further and further and may penetrate into the blood, when it soon causes rapid death.

Hitherto this class of infection has been so rare that adequate means for its prevention and cure have hardly been worked out. It is in order that he might have access to this class of cases, now, unfortunately, so numerous, that Dr. Carrel has been transferred to the northern field of war. It is in order that, in addition to the regular routine work of the care of the wounded, he may study these infections especially, he is being provided by the Rockefeller Institute for Medical Research with the medical equipment requisite for this work.

In carrying out the enormous work incidental to military operations, one government alone could hardly undertake at this critical period to organize hospitals and laboratories for conducting research work. They must be quite content to deal with conditions as they arise. It is just there that Dr. Carrel's peculiar qualifications come in, and in that respect that the contribution of the Rockefeller Institute is largely made.

Hence it is that he is to have a staff consisting of bacteriologists, chemists and technicians, forming a laboratory unit in addition to the regular surgical unit of the hospital. He is fortunate in being joined by Dr. H. D. Dakin, who has been for many years in this country and has a distinguished reputation as a chemist. He has been assigned to take charge of the chemical part of this humane work of investigation.

The Rockefeller Foundation has just voted an appropriation of $20,000, to be used under the direction of the Rockefeller Institute, in furthering medical research work under war conditions.

The Institute has had many appeals made to it for serum for use in the treatment of meningitis and dysentery, and these serums have been distributed freely.

NOVOCAIN.

Treasury Department,
Washington, February 26, 1915.

To Collectors of Internal Revenue:

The question as to whether novocain and similar preparations come under the provisions of the Harrison Narcotic Law as synthetic substitutes for cocaine is now under consideration. Until this question is fully determined, novocain and similar preparations, the exact character of which has not been fully established, will not be held as coming within the scope of this law.

Respectfully,

DAVID A. GATES,
Acting Commissioner

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Hosmer, J. E., Modesto.

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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EDITORIAL NOTES

EXPOSITION-YEAR VACATION AND THE A. M. A.

If you have not already done so, begin now to plan your vacation. Everyone who works hard, particularly along the line of brain work with its attached responsibilities, should take a complete rest from such occupation for at least a few weeks at some time during the year. You owe that rest to yourself and your patients. This year you can so arrange your vacation as to make it not only a rest, but a wonderful and instructive outing as well; plan your trip so as to spend some part of the time in San Francisco during the third week in June. The scientific work in the sections of the A. M. A. will be very good; the exhibits in connection with public health activities will be very fine and very illuminating. And then there is the wonderful Exposition, with thousands of things you will want to see and to know about. You can hardly afford not to see the Exposition and you might as well come at a time when you will get the most out of your trip—the week beginning June 21st, 1915. Do not forget it and begin to plan now to be here at that time.

DEFENSE BY INSURANCE COMPANIES.

Recently some new points in regard to the defense of suits for damages for alleged malpractice and the attitude of insurance companies thereto, have been brought to our attention. One physician was of the opinion that he held a policy in which the company agreed to pay any judgment against him but not to undertake the actual defense of his case in the event that he was sued. This doctor had not read his policy and had got that impression from some other physician who had insurance and who also, in all probability, had not read *his* policy. As a matter of fact, no insurance company issues such a policy, so far as known, though doubtless Lloyds or some other concern might write a special policy of that kind if asked to do so. There is a standard form of policy covering this form of liability, which has been carefully worked out by lawyers and which is, practically, the same with all companies. Some of the companies have a few more technicalities to enable them to get out of defending a few more suits, but that is all. If you are insured in a casualty company, *read your policy carefully;* probably not one physician in a thousand, having insurance, has ever read his policy through enough times to know its provisions. They all contain one provision which is that the insured physician must notify the company as soon as he learns of a threatened suit and send them the papers as soon as he is served with them in any such suit. And by the way, an insurance policy is nothing more than a contract entered into between two contracting parties; the company and the physician. The company agrees to do certain things, *provided* (and that is vitally essential) the physician does certain things, only one of which is paying the premium. If the insured does not live up to his part of the contract, that releases the company from its portion of the contract and the physician might as well have no insurance. He has simply thrown his good money away. That is why the Council instructed the Secretary to be very explicit in warning a member who is threatened or sued to notify the insurance company immediately, in case such member carries insurance. This does not, however, cancel the interest which the State Society takes in his case. If the company tries to or succeeds in getting out of its responsibility by some technicality, the State Society stands behind the member and will protect him. If the lawyer employed by the company does not properly handle the case, our legal department steps in and undertakes to do it properly. But the Council, and the House of Delegates, have felt that it was wrong to all the other members of the Society not to make the insurance companies shoulder the expense which they had contracted in issuing the policy to a member who might subsequently be sued.

LEGAL ABSURDITY.

A curious case has come up in the southland. A member who holds insurance in an indemnity company has been sued, not for alleged malpractice, but for breach of contract, and the insurance company states that it does not insure against breach of contract but only against claims of malpractice, carelessness or errors of judgment. The facts in the case are more or less these: A woman was operated upon more than a year ago, for a tumor of the breast; the surgeon removed the breast, at the time of the operation. She now complains that at the time she consulted him, he agreed and contracted with her to operate upon her breast and remove the *tumor* but *not to remove the breast.* The complaint does not allege carelessness, neglect

or error of judgment but merely that he broke his contract with her in that he did remove the breast. It is only fair to state that the insurance company has offered to defend the action if the physician will sign a statement acknowledging that he has no claim upon them under the policy because the action is based upon a something not specified in or covered by the policy. It is not believable that a surgeon of the prominence of the member in question would make any such contract or undertaking. Every surgeon knows that when he starts a breast operation for tumor, not only the breast but a good deal more may need taking away, and the extent of his operation he cannot foresee when he makes his incision. In all probability this case will fall to the ground, but it serves well to bring up a new point—be very careful in your statements to the patient before an operation and never undertake or contract to do a certain limited and specified thing. Furthermore, it would be very wise, in all serious operative conditions, to have the whole statement of the case and what is to be done by the surgeon regardless of limitation, specified in writing. It is true that the right of the patient to sue cannot be released by the patient in writing before an operation, but when such a statement is in evidence, it helps very much to prevent or to win a suit should such a contingency arise at some time in the future. The fact that the tendency to "sue the doctor" has so enormously increased in the last few years, should make us all very careful to leave nothing undone in the way of protection against possible future trouble. We are protecting ourselves and each other, for carelessness leading to a judgment against a physician invariably stirs up other people to sue other physicians.

INVESTIGATE ALL APPLICANTS.

Again must we urge all county society secretaries to send in the names of applicants to the office of the State Society for investigation and report. Membership in county units is becoming more and more valuable and important; as the medical law is broken down, from legislature to legislature, membership in a recognized medical organization of high standing will become more necessary and more valuable. Some county units are doing this now, but all are not and since the first of the year at least two societies have elected to membership physicians who, from their records in our office, would be seen at a glance to be undesirable material. Keeping track of and filing data about physicians is a very large part of the office work of the State Society and it has been done for years in order to have the information for the benefit of county units. Please remember.

"THE MEDICAL TRUST!"

It has been whispered in the JOURNAL office, in a very emphatic whisper, that the osteopaths, and the numerous horde of drugless freaks that have been infesting Sacramento in the attempt to change the present law so as to allow almost anyone to practice medicine at his pleasure, are in a sad, sad state of mind. "The medical trust" was not at all in evidence and there was no bogey man to howl at with rumpled hair and wildly flinging arms! It was almost unbelievable! There was no committee or official representative of the State Society—the "medical trust"—in Sacramento; there was no deep-dyed villain hanging around to secure the passage of bills that would make it difficult for the osteopath to become, in a moment, a physician and surgeon or the drugless pretender to rob and kill the sick. Not at all. There was no one to fight and to throw mud at, and they were sorely peeved. Efforts were made in several different ways to get the Society excitedly interested and so furnish the opening for howling about the "medical trust" and its pernicious activity. But nothing of that kind was doing. The President of the Board of Medical Examiners sent a carefully prepared letter setting forth the true purpose and object of a good medical law and high medical standards, to every member of the legislature; if one of them wanted actual information, it was at hand. This letter was very similar to the letter sent to Governor Johnson by the Council of the State Society—and ignored by him—two years ago. That was all. The legislators had been told what was right and it was then up to them. We were not pleading for anything and so making it possible to be slandered. The President of the board, Dr. Harry E. Alderson, also appeared before committees several times when there were hearings on the various medical bills before the legislature; but in his official capacity and to give accurate information, if desired. And even this small and dignified appearance of regular medicine was received badly and the attempt made to discredit it. An osteopath on the board, Vanderburgh, made an affidavit to the effect that last summer Dr. Alderson attempted to make a deal with him, the gist of which was that if he would vote to refuse recognition to three medical schools in San Francisco, Alderson would vote to recognize the osteopathic diploma mill in Los Angeles, and that he Vanderburgh, indignantly rejected any such dishonest bargain! Dr. Alderson filed an affidavit to the effect that the whole thing was untrue. At a committee hearing to investigate the incident, one argument was sufficient to settle the whole matter. In January 1915 Dr. Alderson was *unanimously* elected President. "Dr." Vanderburgh, then a member of the board, alleged that the dishonest bargain referred to in his affidavit was suggested to him by Alderson last year. He was asked the question, why, if he knew of this dishonest suggestion of Dr. Alderson, did he, in January, vote for him to become President of the board? There was no answer. Either Vanderburgh's memory or his ingenuity had deceived him and led him into a dirty mess. Possibly Mr. Roosevelt might apply a "shorter and uglier word." It is not possible, as yet, and without careful study, to say just what injury has been done to the law protecting the people from being preyed upon by ignorant charlatans and drugless quacks, but doubtless when the smoke has cleared away and the result is carefully studied, it will be found that the protective fence safeguarding the people in this matter, has been badly damaged.

IMPORTANCE OF CASE RECORDS.

This brings up the whole matter of case records and their vital importance. Too many physicians are very, very careless in the matter of keeping case records of their patients. Memory is a jade and an utterly unreliable one. Not one person in many thousands can accurately recall, from memory alone, any considerable number of the details of some most important incident that happened a year or so ago, and several people testifying to facts relating to such incidents will contradict each other most flatly, even when all have been equally mixed up in it or have been witnesses of or participants in the occurrence. On the other hand, case after case could be mentioned where the keeping of careful records that could be produced in court, where every essential detail relating to an illness or an operation was a matter of permanent record and not a matter dependent upon the faulty memory of the physician, has either discouraged the bringing of the suit or has made it a trifling matter to win it in court. At operations, such things should be noted as what assistants and nurses were present, what they variously did and if other physicians were witnesses to the operation. Whenever possible, every surgical procedure should be a matter of consultation and a record should be kept of that fact. You can never tell when the most unlikely appearing patient may turn around and sue you. One case is on record where the patient visited her physician at ten o'clock in the morning, thanked him profusely for his attention and paid his bill, and then deliberately walked down-town and filed a suit against him before noon of the same day! The importance of making and keeping an X-ray plate in all fracture cases has been frequently referred to in the JOURNAL and has been recognized by a rule of the Council endorsed by the House of Delegates. But that is only a fragment, though a most important one, of the record in the case. An excellent suggestion has been made in this connection, and it is well worth keeping in mind. When you make your X-ray plate, put two plates in the wrapper, film sides together, and then, if the patient demands the plate, as some of them do, and is quite peeved if you insist upon keeping it, you can give him one and still keep the other for your protection. Some men are doing this now, but it is a convenient thing for all to do and the expense is trifling. By all means think of your records; keep them sufficiently full; do not be careless and slovenly about this and so run the chance of being put to a good deal of trouble and expense—for if you are sued it will take a good deal of your time, and that is an expense to you—to say nothing about placing an added burden on all the members of the society just through your own fault. Keep your case records carefully.

"THE PASSING OF THE DETAIL MAN."

Several most pleasant gentlemen and worthy citizens have expressed a marked degree of pain because the JOURNAL published a little article with the above caption a month or two ago. A detail man is the representative of a manufacturing house and he goes about the country telling all the physicians he can come in contact with, what "the house" instructs him to say. Sometimes, when the house is a good one, he is able to tell the truth; many times he is not, and it must be somewhat unpleasant to him, for he must know it as well as anyone else. The evidence is not in the JOURNAL office now, but it was before the fire, to support the statement that not a single pharmaceutical manufacturing house in the United States welcomed the establishment of the Council on Pharmacy and Chemistry, because not a single one of them was free from the pernicious practice of foisting upon physicians preparations or mixtures or specialties that were not as claimed. And many of them are doing it yet. The Council asks of the manufacturer only the truth; many of them don't like the truth at all. Their big money comes, or used to come, from making the physician believe that what they said about their things was true, and this they did largely by means of the detail man, whereas and as a matter of fact, what they said about their stuff was mostly untrue. It has doubtless happened to many a physician, as it did to one a few years ago, that on a single day four detail men from four different houses called upon him and left four samples of what was supposedly the same thing, though each representative claimed that his house was the only one making the best preparation. How could they all be telling the truth? On the other hand, as an expression of a different opinion, here is a letter from the Co-operative Medical Advertising Bureau, an institution organized by the A. M. A., for the purpose of getting decent advertising in an honest way for the various state medical journals:

> "We want to congratulate you on your sermonette entitled 'The Passing of the Detail Man'!
>
> "This article ought to have the effect of making doctors consult the advertising pages of the California Journal to find out if the articles they want are advertised. We believe if the doctors in a state will, once for all, adopt the policy of asking about any articles they want to buy, 'Has it been approved? If so, why is it not advertised?' that the question of making advertising in the State Medical Journals pay will be solved.
>
> "How far do you think the doctor can be advised to go when he is approached by the detail man? Should he be urged to say: 'I do not find your product advertised in my State Journal. If it has been approved and is in good standing with medical authorities, why is it not advertised in my State Journal?'
>
> "Is it advisable and practicable for you to write another sermonette on the above subject for an early issue of your Journal? If you do, the Bureau wants to reprint them and use

both of these articles whenever it is soliciting business from any pharmaceutical house.

"As soon as the doctor will depend on his State Journal for information about the things he wants to buy, then it will not be possible to print the advertisements that will come to your publication. That is just the difficulty the A. M. A. Journal is having at this time. Furthermore, the advertisements bring the advertiser better returns."

THE HARRISON LAW: CONSCIENCE OR CUPIDITY?

A number of letters have come to the JOURNAL asking for information in regard to various points connected with the administration of the Harrison anti-narcotic law and the rights of physicians thereunder. Many physicians have, and practically every physician at some time or other has had under his care, a drug habitue. Many of these, for one reason of another, do not appear to be good subjects for an attempted cure or for the immediate withdrawal of the drug. That is a matter that is up to the conscience of the physician. The law permits him to prescribe these drugs, but he must put the name and address of the patient on the prescription and also his own name in full and the number of his Federal license. He may personally give a dose to a patient except in his office, without keeping any record. If, however, he gives any prescribed drug to a patient in his office or to be used when he is not present or to be given to the patient by some one else or to be taken subsequently by the patient, then he must keep a record of the name of the patient, the date, the drug and its amount, and this record he must keep for two years. The purpose of the law is not to interfere in any way with the honest practice of the professions affected by it, but to put a stop to the criminal trade in these habit-forming drugs. Cupidity, not conscience, should know fear.

MEDICAL COMMENT ON WAR VICTIMS.

A distinguished English physician, writing to a friend here in California, conveys some interesting facts in regard to conditions related to wounded soldiers. Of course there is much of the letter which is not exactly neutral in tone (!) and therefore is omitted. At the request of the recipient of the letter, all names of men and places are left out:

> I have seen a good deal of the wounded soldiers—we have had 900 in the —— Hospital where I am vice-chairman and to be chairman in March, and I am inspector of Red Cross Auxiliary Hospitals over the whole of ——, which keeps me motoring all about the country. A very large number of beds—about 700—have been equipped by private persons, mostly only 8 or 12 in one place, so it is a big job. We get relief by drafting out from the —— Hospital our slight and semi-convalescent patients so as to have our beds free for the more serious cases. We have erected marquees and a long wooden building in the hospital grounds which give us about 140 extra beds, and we also use three wards for soldiers. They almost all arrive septic, but the sepsis as a rule is not of a bad type. Though there are some cases of tetanus and of gangrene, I have never seen wounds so foul producing so little constitutional disturbance. But the sepsis is very capable of causing secondary hemorrhage. Never was a war conducted with such brutality since the early middle ages. The Belgians, of whom I have seen a few, seem very nice fellows, very courteous and very patient. We offered to take some Belgian refugees into our house, but being near the coast this is a prohibited area for aliens so we have not had any.

NEW AND NON-OFFICIAL REMEDIES, 1915.

The 1915 edition of this exceedingly valuable book issued by the Council on Pharmacy and Chemistry of the A. M. A., 535 North Dearborn street, Chicago, has been issued and is much enlarged and by so much, more useful. It may be fairly said to contain descriptions of all the worthwhile proprietary and nonofficial remedies now on the market in the United States and it is the only book which contains comprehensive and trustworthy discussions of the composition, source, properties and dosages of proprietary remedies. Paper bound copies cost 50 cents and cloth bound $1.00, and they may be had from the A. M. A. at the address already given. In addition to the individual descriptions of drugs and preparations, the book contains critical discussions of the various classes of preparations. These general discussions compare the value of the newer remedies with the established drugs which they are designed to displace. Thus the book affords an authoritative review of therapeutic progress.

The book contains, as a supplement, a list of references to discussions of articles not admitted to New and Nonofficial Remedies which have appeared in *The Journal of the American Medical Association,* in the Annual Reports of the Council on Pharmacy and Chemistry and in the Reports of the A. M. A. Chemical Laboratory. This list of references anables physicians readily to obtain information in regard to the many nostrums which are exploited to the medical profession.

SUMMER GRADUATE MEDICAL COURSE.

The second of the summer graduate medical courses inaugurated by Stanford University Medical School has been outlined for the present year. The session will extend for six weeks from July 6th to August 14th and all the classes will be in San Francisco. The courses are quite comprehensive in their scope and as some of them are limited in the number of students that will be accepted, those who are considering the matter should correspond early with the Dean, Stanford University Medical School, Sacramento and Webster streets, San Francisco, Calif.

LUETIN REACTION IN SYPHILIS.

Owing to the fact that luetin is now being made by large producers of biological products whose enterprising agents are selling the same to all who can be induced to buy, it is felt that there is no little danger that the preparation will be improperly used by some and perhaps false conclusions drawn from the results. Already there are by far too many individuals carrying diagnoses of syphilis based on insufficient evidence, and by far too many uncured syphilitics who have been declared cured merely upon the basis of one negative Wassermann or Noguchi reaction. It is hardly necessary to state that wrongly interpreted luetin reactions also can lead to family tragedies and untold complications. It is felt that a few definitely known facts concerning this subject should again be brought to the attention of the profession.

Luetin consists of an emulsion of several pure strains of the spirochaeta pallida killed by heat and containing as a preservative ½% tricresol. This is diluted before use with an equal amount of normal salt solution. The preparation now on the market is supposed to be ready for use without further dilution. Luetin should be kept on ice and the greatest care exercised to prevent contamination. Just before using, the preparation should be very thoroughly shaken and should be injected before the solid elements begin to settle in the fluid. The needle should be of the very smallest caliber with a short bevel, for it is necessary that it be introduced intradermically. For the test 0/07 c. c. of the luetin is very carefully injected intradermically after first sterilizing the skin with alcohol. Usually the skin over the left lower biceps is chosen for this purpose. If proper attention is not paid to the technic, secondary infection and spurious reactions may occur.

From experience at the Stanford University Medical School, where luetin kindly supplied by Noguchi has been used since 1912 in a large number of cases, it is felt that a reaction to be declared positive should have the following characteristics:

Within 48 hours an *indurated,* inflamed, deeply seated *nodule* usually develops varying in size from that of a pea to that of a hazel nut or even larger. The induration and redness persist for a week or more. Those cases in which the induration and inflammation subside completely within a week and never return are discarded. Occasionally, however, there are cases (late or latent lues) where the papule subsides rapidly to reappear a week or more later (the "delayed reaction"). Such reactions are prone to become very marked or even "hemorrhagic."

The essential features are persistent induration and inflammation. Formerly when the control injections were made, often there developed at the site of the control what appeared to be a positive reaction, but this always subsided within a few days and never returned. An indurated reaction that persists a week is considered to be positive. The reactions vary in size and severity from that of a pea-sized bright red nodule to that of a marble-sized violently inflamed tumor with an extensive surrounding red areola. Usually on the summit of the lesion there is a pustule-like point, but it has been found that the pus is sterile. The nodule undergoes involution slowly and leaves pigmentation and often slight thickening to mark the spot. Some that have been observed at Stanford after two years still show small scar-like elevations at the point of injection.

Noguchi recently made the following observations based on the work of *fifty* investigators (N. Y. Med. Journal, Aug. 22, 1914):

"The luetin reaction in early syphilis occurs in less than one-third of the cases, and is usually mild."

"In less than one-half of the cases of secondary syphilis it is positive and the reaction is usually mild."

"In late syphilis the reaction appears in about 80% of the cases."

"In congenital syphilis the reaction is reported to occur in over 70%."

"In the so-called parasyphilis cases there are no constant findings."

Various observers report a high percentage of positive results in latent lues.

The reaction does not always run parallel with the Wassermann, although frequently they are both positive. Treated cases often show negative Wassermann and positive luetin reactions.

Reading the foregoing statistics by Noguchi, another way, it will be seen that:

In *early syphilis, two-thirds* of the cases show *negative* luetin reactions.

In *secondary syphilis one-half* of the cases show *negative* results.

In *late syphilis twenty per cent.* of the cases *fail* to react to the luetin.

In *congenital syphilis thirty per cent.* fail to show the reaction.

The luetin reaction in early and secondary syphilis is mild and it should be remembered that it requires considerable experience to be able to recognize these mild reactions.

There is no doubt that the luetin test may be of very great *assistance* in making a diagnosis, but before attempting to perform the same one should read up on the subject. The "detail men" who are visiting "doctors" (M. D.'s as well as the numerous other varieties) and enthusiastically praising this new method are apt to mislead some so that mistakes will be made. For those who are sufficiently interested, the following list of references is offered:

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HARRY E. ALDERSON.

ORIGINAL ARTICLES

DIAGNOSIS OF GASTROINTESTINAL DISEASE.*

Illustrated by Forty Operative Cases—April-October, 1914.

By CARO W. LIPPMAN, M. D., Visiting Roentgenologist to the City and County Hospital, 135 Stockton St., San Francisco.

Before I begin my discussion I wish to state that these are forty consecutive operatively confirmed diagnoses out of the 170 gastrointestinal cases which I have seen in the last six months. I purposely confine myself to these few cases which I have seen in this city as I wish to show that we can diagnose as well here as in Rochester or Europe. I present operatively confirmed diagnoses because I hope that after hearing about these cases you will believe that the same percentage of correctness holds good in my non-operative cases. My paper will not attempt to discuss all my cases because I would have to cover a greater part of the field of gastroenterology. I will merely discuss a few interesting points in this report of forty cases.

Schmieden in the Grenzgebieten last March* made correct diagnoses in about 85% of his cases. This he did within a reasonable time after the patient had entered the hospital. He did not dawdle until the patient was moribund and beyond surgical aid. Turning a patient over to the surgeon at this late stage is a vicious and horrible practice. I speak of this particularly because of the large percentage of poor operative results reported by some of my fellow internists in this and other cities.

In discussing Schmieden's paper at the time I maintained that we could arrive at practically the same percentage of correctness in non-acute gastrointestinal disease if we did three things thoroughly: firstly, make a good history; secondly, make a thorough fluoroscopic examination; thirdly, examine the stool for occult blood or with the Schmidt test diet as the case requires. I rate these in the order of their importance. All other examinations are of lesser importance and contribute other than confirmatory evidence only in exceptional cases. Of course, I am talking of diseases which lie beyond the reach of the proctoscope. There is no single gastrointestinal case in my operative series which could have been better diagnosed if other methods of diagnosis had been employed.

About history taking we all know, the value of the Schmidt test diet I hope to take up in a later paper. To-night I shall discuss chiefly the screen examination as three-fourths of these cases were not mine for general diagnosis but were sent to me for screen examination. I also wish to emphasize the fact that it is a fluoroscopic, a screen examination, which helps. To take plates for the diagnosis of stomach conditions is like trying to diagnose lameness from a photograph. If the man has a half leg missing you may be quite sure he is lame, but if he only limps slightly you need to see him walk or see him on the movies to make sure that he is lame. Now the screen is our moving picture and we need to recognize defects in the movement of the stomach and intestines in order to make our diagnoses correctly. I can illustrate this best with the diagnosis of duodenal ulcer of the lower part of the organ, that is to say lower down than the entrance of the common duct. Six times cases have come to me with the clinical diagnosis of carcinoma, or pylorostenosis resulting from ulcer, with the classical syndrome of vomiting, loss of weight, pain after eating, etc. None of these six cases showed radiological signs of pylorostenosis nor of carcinoma but they did show the so-called reverse peristalsis of the duodenum, a moving back of the duodenal contents toward the stomach after forward progression had taken place. This may occur but once or constantly, according as the stenosis be mildly spastic or definitely organic. Once it is seen we know that there is some irritation at the lower end of the duodenum causing a spasm and this is an ulcer in ninety per cent. of the cases which I have seen. In the more severe cases a definite organic stenosis is produced which may be due to ulcer and its consequences or to a congenital band in the neighborhood of the ligament of Treitz. Two of my operated cases (Nos. 19 and 30) showed the syndrome of duodenal stenosis (Holzknecht):

(1) Filling of the duodenum above the seat of stenosis so that the wall of the duodenum is sharply outlined.

(2) Ineffectual or partly effectual peristalsis of the filled duodenum causing a change in the form of the organ but no change in the position of the contents. This is the so-called antiperistalsis.

(3) Retention above the stenosis.

(4) Occurrence of paralytic dilatation above the stenosis.

Only severe cases show the whole group of symptoms. The great majority show only the filling of the duodenum and the so-called antiperistalsis. The first of my two operative cases (No. 19) showed the filling and reversed motion of contents only during the first examination and at no subsequent examination. The second case (No. 30) showed only four or five waves of reversed motion and that after being induced by a special technic of my own. Incidentally I wish to mention that both of these cases showed old healed gastric ulcers. For this technic see Fortschr. a. d. Geb. d. Röntgen S. trahlen, April, 1914. It also appeared in Surg., Gynec. and Obst. (Dec., 1914). See also München. med. Wchnschr., Sept. 29, 1914, J. A. M. A., March 21, 1914.

* Read before the San Francisco County Medical Society, November 17, 1914.

Case 30 presents an easy transition into another group of cases, the cases presenting a niche, a hole in the wall of the stomach. A true niche is usually found on the opposite side of the stomach. See Cases No. 15 and No. 37.

If you be not familiar with the term niche, let me explain that it is a hole in the wall of the stomach due to a callous penetrating ulcer which fills with bismuth and stays filled. I require three factors to make a diagnosis, first a bismuth filled hole projecting from the stomach shadow; secondly, the bismuth in this hole cannot be moved; thirdly, a pain point coinciding with the niche; fourthly, a gas bubble may be present above the projecting bismuth. I could move the bismuth out of the pseudoniche. As a matter of fact if I do not see a niche once in eighty to one hundred cases sent to me for examination I feel that I am not doing first-class screen work. In Vienna I used to see five or six a month out of their material, in Heidelberg, Halle and Breslau perhaps one in a month. This averaged up about one in eighty or a hundred cases. Seeing these holes in the wall of the stomach is a matter of technic.

Another point which I wish to bring out is that it is impossible in these cases to make any other diagnosis than penetrating ulcer with the possibility of ulcer carcinoma. I go into the subject of the niche so carefully because after making a diagnosis of penetrating ulcer two months ago one of the foremost surgeons of the city said to me, "You don't really see the penetrating ulcer, you infer it from the hour glass stomach." I merely wish to add that Case 11 presented a carcinoma engrafted on an older ulcer which I should undoubtedly have seen as a niche years previously. This presents the old story, the carcinoma patient comes too late to the diagnostic specialist and to the surgeon. In the six carcinoma patients which came to section I was able to make the direct positive localizing diagnosis in four (Cases Nos. 1, 2, 21 and 26); in one case (No. 4), I was able to make a diagnosis of a deforming lesion about the pylorus but was unable to say that it was carcinoma. In the sixth case I merely ruled out the clinical diagnosis of carcinoma of the sigmoid flexure but didn't remark anything about the stomach other than there was a disturbance in antrum peristalsis which might just as well have been due to adhesions from the palpable tumor. Really early diagnosis of carcinoma is just as impossible from the screen examination as it is with other methods. Many times, however, the radiological is the earliest diagnosis, particularly in the cases without palpable tumor. This is particularly true in scirrhous carcinoma (Case No. 2). This offers no great amount of satisfaction to the diagnostician as I have never seen an operable scirrhous. (By scirrhous I mean the tumor type which infiltrates and shrinks the wall of the stomach, not just any hard tumor.) Case 21 is very interesting from a diagnostic standpoint. The surgeon had made a diagnosis of cancer of the stomach, the radiological examination showed a probable carcinoma of the cardiac end of the stomach with marked stenosis of the esophagus. This screen picture was shown to another medical consultant who later passed esophageal bougies whereafter the patient could eat solid food. He told me that the woman had cardiospasm. Gentlemen, cardiospasm with the ragged picture which this case showed is unknown to me. Cardiospasm cases show a smooth even dilatation. This patient was operated on two months later for a tumor in the abdomen and a carcinoma of the cardiac end of the stomach with general carcinomatosis was found. Cardiospasm with inanition is a very excellent diagnosis to leave alone until every organic lesion has been ruled out. Autopsy usually shows a lesion whether luetic, cancerous, or tubercular.

In my forty cases I have made but one bad positive mistake—No. 17. In a case of pancreatic tumor I saw besides the extraventricular tumor a small stomach almost hour glass in shape owing to smooth indentations on both sides. Peristalsis did not pass over this ring. I had previously only seen this condition in scirrhous carcinoma of the stomach. At operation the surgeon found a ring about the stomach which he called congenital. It did not disappear under anesthesia. I can find nothing similar described in the literature. I also declared a *spastic* hour glass stomach with penetrating ulcer to be an organic hour glass stomach (Case 37) and located a duodenal ulcer on the wrong side of the pylorus (Case 24). Considering that in these forty cases I have made 23 reports on the upper part of the duodenum, 17 negative and six positive in this operative series, I do not believe that the location of the ulcer on the wrong side of the pylorus is a grave offense. Incidentally I did the case without following my regular routine. Lately in these cases with six hour residue and some distortion of the duodenal bulbus or cap (the first portion of the duodenum) I merely make a diagnosis of peri-pyloric ulcer, either gastric ulcer with adhesions or duodenal ulcer with a mild grade of pylorostenosis. In regard to a six-hour residue I have never seen a patient prepared properly who did not show either gastric ulcer or pylorostenosis if the residue were of considerable size and the proper meal had been given. The converse is not true.

Now I come to the last point which I shall take up this evening. Cole claims the first portion of the duodenum (the bulbus of Holzknecht), the cap of Cole) is always without defect if there be no surgical duodenal ulcer present and no adhesions about the cap. I do not find this true as he claims in 100% of the cases but I certainly agree with Brewer's report of cases which Cole did for him. Brewer found that Cole was correct in 89% of the cases. Cole takes at least 36 plates to make a diagnosis. This is impracticable here as the expense is great. I accomplish nearly the same results on the screen with certain tricks (Bucky effect) and have had success in about the same proportion of cases. I believe that it is of value therefore in about 85% of all cases. Note Case No. 28 particularly where the bulbus appeared like a button stuck on the end of the stomach instead of one of the normal shape.

Before I close I wish to call your attention to

Case No. 31, a subphrenic abscess, probably from a perforated duodenal ulcer in which many valuable days were lost in percussing and discussing, in passing stomach tubes and doing blood tests. The screen showed the condition at a flash. High up in the pleural cavity was the diaphragm, beneath that an air bubble about the size of two fists, and beneath that a fluid level which showed waves and splashes as the man was moved about. This merely clinches my belief that the strongest factor in the diagnosis of chronic gastrointestinal conditions is firstly, the history and secondly, the screen examination.

Gastric ulcer	
Penetrating ulcer	2
Simple ulcer	1
Duodenal ulcer	
Pars superior	2
Pars inferior	2
Pylorostenosis	
After ulcer	4
From adhesions	1
Carcinoma ventriculi	
Cardiac, involving esophagus	1
Other parts of stomach—	
Operable	1
Inoperable	5
Carcinoma esophagi	1
Tubercular salpinx with adhesions about sigmoid	1
Gallbladder adhesions to stomach	3
Adhesions about duod	1
Abscess probably arising from iliac perforation	1
Stone in cystic duct	1
Inflammatory mass attached to spleen	1
Pancreatic tumor	1
Coloptosis	1
Visceroptosis	1
Adhesions about right dome of diaphragm	1
Gastroenterostomy	1
Chronic appendix	2
Subdiaphragmatic abscess	1
Adhesions of cecum to belly wall	1
Hypernephroma (growth above kidney) and gallstones	1
Retroperitoneal sarcoma (testicle)	1
Abscess of liver	1

Case 1. Clin. diag. or question: Carcinoma ventriculi? probably not at pylorus. Clinical points: Pain in abdomen 14 months. No obstructive symptoms. No vomiting, except three times in month previous to operation. Lost 55 lbs. in one year. No palpable tumor. Radiological diagnosis: Inoperable carcinoma of pyloric end of stomach adherent to neighboring organs. Radiological points: Defect in stomach outline. Operative diagnosis: Inoperable carcinoma of stomach (pyloric end) grown into pancreas, adherent to liver.

Case 2. Clin. diag. or question: Carcinoma in abdomen, point of origin? Clinical points: Loss of weight followed by ascites with enlarged liver and palpable tumor in region of splenic flexure. Radiological diagnosis. Inoperable scirrhous carcinoma of stomach with adhesions. Radiological points: Contracted stomach with smooth irregular outline. Operative diagnosis: Inoperable scirrhous carcinoma of stomach. Pylorus and cardia free. Large cauliflower growth on back wall of stomach.

Case 3. Clin. Diag. or question: Tubercular ulcer of sigmoid. Clinical points: Virgin, difficult to examine, pain and rigidity in sigmoid region. Guiac ++ in stool. Radiological diagnosis: Adhesions about sigmoid flexure, no gastric or duodenal ulcer, probably no tuberculous ulcer of colon. Radiological points: Colon filled in entirety absence of Stierlin's sign (absence of bismuth in colon about tuberculous ulcer), bulbus perfect. Operative diagnosis: Tubercular salpinx adherent to sigmoid flexure, no ulcer of sigmoid.

Case 4. Clinical diag. or question: Ulcer or carcinoma of stomach? Gastric ptosis. Clinical points: Chronic indigestion for years with recent great loss of weight, no gastric or stool examinations were made, no palpable tumor. Radiological diagnosis: Probable old ulcer at pylorus with adhesions, no duodenal ulcer. (NOTE. Correct wording of radiological diagnosis should have been deforming lesion near pylorus, ulcer or carcinoma?). Radiological points: Enormous bulbus (associated most often with achylia), notch near pylorus constant during two days, bulbus perfect, stiffness of stomach wall on pressing in with finger. Operative diagnosis: Beginning carcinoma of lesser curvature of stomach with much involvement of glands. Little of stomach.

Case 5. Clinical diagnosis or question: Cholelithiasis, possibility of duodenal ulcer. Clinical points: Cholelithiasis history, pain in right hypochondrium, vomiting. Radiological diagnosis: Adhesions about pylorus, duodenum and gall bladder. No radiological signs of gastric ulcer. No duodenal ulcer. Radiological points: Stomach pulled markedly to right. Operative diagnosis: Adhesions at the pylorus and in gall bladder region. No cholelithiasis. No duodenal or gastric ulcer.

Case 6. Clinical diagnosis or question: Pyloric stenosis. Clinical points: Vomiting for eight years. No blood in vomitus. Residue in stomach. Radiological diagnosis: Pylorie stenosis. Adhesions about pylorus, duodenum, and gall bladder. Radiological points: Complete retention of bismuth eight hours after examination. Residue half-moon shaped. Operative diagnosis: Pyloric stenosis due to old ulcer. Adhesions about pylorus, duodenum and gall bladder.

Case 7. Clinical diagnosis: Carcinoma of splenic flexure. Possible abdominal aneurysm. Clinical points: Chronic indigestion. Palpable tumor. No stomach examination had been made. Radiological diagnosis: Abdominal tumor not connected with splenic flexure. Long so-called ptotic stomach. Radiological points. Palpable tumor at level of stomach bubble to right of splenic flexure. Distubances in peristalsis near pylorus. Operative diagnosis: Carcinoma of lesser curvature of stomach chiefly involving glands. No tumor or splenic flexure.

Case 8. Clinical diagnosis or question: Cholelithiasis. Stenosis of small gut? Clinical points: No jaundice. Vomiting. Abdominal pain. Not localized in any particular spot. Appendix had been removed. Radiological diagnosis: Adhesions about gall bladder and pyloric region. No radiological signs of stenosis or gastric ulcer. No duodenal ulcer. Radiological points: Stomach pulled markedly to right. Operative diagnosis: Adhesions about pylorus and gall bladder region. No cholelithiasis. No gastric or duodenal ulcer.

Case 9. Clinical diagnosis or question: Gastric or duodenal ulcer? Clinical points: Vague abdominal and gastric disturbances since childhood. Radiological diagnosis: No radiological signs of gastric or duodenal ulcer. Probable adhesion of duodenum to belly wall. Radiological points: Constant notch about size of walnut on greater curvature of stomach. (Due to pressure of gas distended colon.) Operative diagnosis: Old cicatrix? at pylorus. Adhesions about duodenum. No duodenal or active gastric ulcer.

Case 10. Clinical diagnosis or question: Pylorostenosis. Malignancy? Clinical points. Duodenal ulcer perforation one year ago. Coffee ground vomitus for last few days. Marked loss of weight in past year. Radiological diagnosis: Marked gastrectasis, pyloric stenosis with adhesions about pyloric, duodenal and gall bladder regions. Radiological points: Almost complete retention of

bismuth six hours after meal. Halfmoon-shaped residue. Peristalsis active, at first, gradually disappearing. Operative diagnosis: Enormously dilated stomach, pylorostenosis. Adhesions in and about pyloric, duodenal and gall regions. No malignity.

Case 11. Clinical diagnosis: Gastric ulcer. Malignancy? Clinical points: Vomiting. Loss of weight in last months. Old ulcer history. Radiological diagnosis: Fungus carcinoma of pyloric end of stomach adherent to neighboring organs. Radiological points: Defect in stomach shadow. Operative diagnosis: Cancer of pylorus arising from old callous ulcer which had at some previous time perforated into liver.

Case 12. Clinical diagnosis or question: Malignant tumor in stomach. Origin? Clinical points: Rapidly growing tumor in left part of abdomen: 60 lbs. loss of weight in three months. Radiological diagnosis: Radiologically negative stomach and duodenum. No constriction of large gut. Tumor probably not arising from colon. Radiological points. Fluid levels. Operative diagnosis: Abscess arising probably from small intestine infiltrating but not ulcerating colon. Diagnosis made after two operations.

Case 13. Clinical diagnosis or question: Duodenal ulcer? Malignancy? Clinical points: Ulcer history. Loss of weight. Radiological diagnosis: Ptosis and dilatation of stomach. Pylorostenosis with adhesions about pylorus. Duodenal ulcer? Radiological points: Almost complete retention of bismuth six hours after meal. Operative diagnosis: Marked pylorostenosis due to adhesions about duodenum and pylorus. Pancreas involved in mass. Probable duodenal ulcer. ? of malignancy.

Case 14. Clinical question or diagnosis: Stone in cystic duct? Pylorostenosis? Clinical points: Vomiting lasting for weeks without being able to retain any kind of food. Once jaundiced. Radiological diagnosis: No radiological signs of gastric ulcer, pyloro-stenosis, or carcinoma. Operative diagnosis: Atrophied gall-bladder. Stone in common duct. No pylorostenosis.

Case 15. Clinical diagnosis or question: Gastric ulcer. Pylorostenosis? Malignancy? Clinical points: Two and a half years' pain, relieved by vomiting. Aggravation of symptoms in last months. No hematemesis. Radiological diagnosis: Hour glass stomach (organic). Callous penetrating ulcer of upper sack. No duodenal ulcer. Radiological points. Haudek's niche with air bubble. Two separate sacks. Operative diagnosis: Callous ulcer of lesser curvature in organic upper sack of hour glass stomach. No duodenal ulcer.

Case 16. Clinical diagnosis or question: Gallstones. Clinical points: Tenderness in right hypochondrium on pressure. Vague distress to left of navel. Radiological diagnosis: No duodenal ulcer. No radiological signs of gastric ulcer or neoplasm. Possible tumor in region of left kidney. Radiological points: An inverted V-position of colon in erect posture with text book position of colon in supine position. Operative diagnosis: No ulcer of duodenum or stomach. Attached to spleen is a tumor mass of omentum about size of fist. Inflammatory in nature? No gallstones.

Case 17. Clinical diagnosis or question: Pancreatic tumor. Clinical points: Diabetes and tumor in abdomen. Loss of weight. Total HCl, 8. Radiological diagnosis: Palpable tumor not arising from stomach or duodenum. Scirrhous carcinoma of stomach. No duodenal ulcer. Radiological points: Small contracted stomach with constant narrowing about one and a half inches above pylorus. No peristalsis was noted above this ring. Operative diagnosis: Pancreatic cyst about size of tumor. No carcinoma but a ring about one and a half inches above narrowing of stomach which was present during the entire operation. No duodenal ulcer.

Case 18. Clinical diagnosis or question: Chronic appendicitis? Clinical points. Vague abdominal distress. Diarrhea. Radiological diagnosis. Enteroptosis. No radiological sign of chronic appendix. No gastric or duodenal ulcer. Operative diagnosis: Marked ptosis of stomach. No gastric or duodenal ulcer. Chronic appendix completely bound down.

Case 19. Clinical diagnosis or question: Ulcer location? Malignancy? Clinical points: Seven years of history of pain at varying times after eating. No vomiting until recently. Tarry stools. Rapid loss of weight. Radiological diagnosis: Stenosis of pars inferior duodeni. Stenosis has large spastic component. Ulcus duodeni? Radiological points: Duodenum shows peristaltic waves without advance of contents. Operative diagnosis: Ulcer of pars inferior duodeni. Old healed ulcer of greater curvature of stomach.

Case 20. Clinical diagnosis or question: No real clinical diagnosis. Possible duodenal ulcer. Clinical points: Vague abdominal distress. Some loss of weight. Vomits every morning since six years. Radiological diagnosis: No duodenal ulcer. No radiological signs of gastric ulcer or neoplasm. Isolated coloptosis atony of esophagus. Radiological points: Broad band of bismuth throughout esophagus remaining 30-40 seconds. Operative diagnosis: No gastric or duodenal ulcer. No gallstones. Appendix freely movable. Coloptosis.

Case 21. Clinical diagnosis or question: (Surgeon) Gastric carcinoma. (Medical Consultant) even after radiological examination, cardiospasm. Clinical points. One year vague digestive disturbances. Sensation of food sticking. Rapid loss of weight. Vomited solid food for months. After sounding by consultant could eat solid food. Two months later abdominal tumor. Radiological diagnosis: Stenosis of esophagus. Carcinoma of cardiac end (?) of stomach involving esophagus. Radiological points: Fluid bismuth mixture halts in esophagus assuming funnel form. On horizontal fluoroscope (trochoscope) cardiac end of lesser curvature is ragged. Bulbus duodeni perfect. Operative diagnosis: Two months later. Carcinoma of cardiac end of stomach involving esophagus. General carcinomatosis of abdomen including metastasis in ovary.

Case 22. Clinical diagnosis or question: Carcinoma of esophagus. Clinical points: Unable to swallow solid foods. Sensation of food sticking for some months. Radiological diagnosis: Stenosis of esophagus. Carcinoma? Radiological points: Bismuth halts two inches above esophagus for ten minutes. Operative diagnosis: Carcinoma of esophagus.

Case 23. Clinical diagnosis or question: Before first operation—appendix. Before second operation, two months later—subphrenic abscess. Clinical points: Mass in region of appendix. Temp. 103°. Pulse 140. White count 24,000. Septic temp. Radiological diagnosis. After first operation. No radiological signs of gastric or duodenal ulcer nor of neoplasm. No positive radiological diagnosis possible. Radiological points: After first operation. Fixation of right dome of diaphragm seemed to make clinical diagnosis stronger. Operative diagnosis: First operation. Appendix not cause of trouble. No focus of pus found. Mass was omentum. Second operation. Nothing found except adhesions between liver and diaphragm.

Case 24. Clinical diagnosis or question: Ulcer. Where? Clinical points: Hematemesis, six days before. Ulcer history. Pylorostenosis had not been ruled out clinically. Radiological diagnosis: Ulcer (probably gastric). No duodenal ulcer. Real diagnosis should have been peripyloric ulcer. Radiological points: Bulbus duodeni well filled out. (Done out of routine.) Six hour residue. Radiological diagnosis: Duodenal ulcer. Mild grade of pylorostenosis.

Case 25. Clinical diagnosis or question: Previous to radiological examination. Adhesions. Good functioning gastroenterostomy? Clinical points: Patient complains of pain but no vomiting at present. Operated three months ago for gastric ulcer. Radiological diagnosis: Good functioning gastroenterostomy wound. Pyloric end of stomach blocked off. Radiological points: No bismuth seen to enter duodenum. Operative diagnosis: Informed afterwards that pyloroectomy had been performed.

Case 26. Clinical diagnosis or question: Carcinoma ventriculi. Clinical points: Large tumor mass in right hypogastrium since three months tumor or mass about size of walnut in epigastrium, movable. Much vomiting in last three months until one week ago; 22 lbs. loss in weight. Radiological diagnosis: Tumor outside of stomach continuous with liver shadow. Infiltration of pylorus. Carcinoma ventriculi. Radiological points: Stomach normal in shape. Movable tumor coincides with pylorus on palpation and moves with it. Antrum peristalsis defective. Slight irregularity of lesser curvature of stomach, one-sixth residue in stomach despite good peristalsis.

Case 27. Clinical diagnosis or question: Pylorostenosis? Clinical points: 23 years old, 25 lbs. loss of weight in last few months. Operated on for appendicitis to cure stomach two and one-half years ago. Vomited after meals off and on for last years. For nine years pain in epigastrium in afternoons and at 11 P. M. Eating made pains worse. Radiological diagnosis: Pylorostenosis. Old peripyloric ulcer, probably duodenal in origin. Adhesions in pyloric, duodenal, and gallbladder region. Radiological points: Large dilated stomach drawn to right. "Stenosen" peristalsis, i. e., violent peristalsis. After 24 hours one-third bismuth residue in stomach. Operative diagnosis: Pylorostenosis. Dense mass of adhesions involving gallbladder and duodenum to lesser curvature of stomach.

Case 28. Clinical diagnosis or question: Peptic ulcer. Radiological diagnosis: No radiological signs of gastric ulcer. Hypersecretion. Duodenal ulcer? Radiological points: No residue in stomach. Button bulbus. Fasting stomach filled with fluid (steerhorn stomach). Operative diagnosis: Duodenal ulcer.

Case 29. Clinical diagnosis or question: Chronic appendix. Duodenal ulcer? Clinical points: Tenderness in right iliac region. Vague gastric symptoms. Radiological diagnosis: Chronic appendix hanging from lower end of coecum? Radiological points: Bulbus perfect. Operative diagnosis: Chronic appendix not retrocecal.

Case 30. Clinical diagnosis or question: Ulcer? Carcinoma? Clinical points: 14 years ago stomach pleated for gastric ulcer. Six months ago began to lose weight. No vomiting. Appetite poor. Radiological diagnosis: Hourglass stomach, probably spastic. Spasmodic stenosis of duodenum in neighborhood of ligament of Treitz. Probable old gastric ulcer with more recent ulcer of the lower part of duodenum. No duodenal ulcer of upper part. Adhesions. Radiological points: Pseudo-niche on posterior wall of stomach. Knife-like indrawing of stomach, dividing it into two parts. Reversed motion of duodenal contents (so-called antiperistalsis). Operative diagnosis: Ulcer of lower part of duodenum. Old gastric ulcer (thickening at pylorus).

Case 31. Clinical diagnosis or question: Inflammatory condition of abdomen. Carcinoma? Clinical points: Six months ago gas formation, six weeks ago stomach specialist. No dark stools. No vomiting. Four weeks ago severe attack of abdominal with "hard muscles" after lobster dinner. No fever. In bed one week. One week ago no free HCl. Ascites. Swelling of legs. Radiological diagnosis: Gas containing subphrenic abscess on right. Adhesions about duodenum, distortion of duodenum and large bowel. Duodenal ulcer? Radiological points: Beneath diaphragm a fluid level which shows waves on moving patient. Duodenum distorted lying along base of liver shadow moving with it. Liver indents upper part of stomach. Operative diagnosis: Subdiaphragmatic abscess. Large amount of stinking pus exudes from wound.

Case 32. Clinical diagnosis or question: Adhesions. ? cause of vomiting. Neoplasm? Clinical points: Six weeks ago ectopic pregnancy? Removal of tumor and portion of gut. Radiological diagnosis: Pylorostenosis. Infiltration of pylorus. Carcinoma ventriculi? Fluid levels probably indicate obstruction to bowel. Radiological points: Disturbance of antrum peristalsis which is violent. Fluid levels in bowels (constant); four-fifths bismuth residue after six hours. Operative diagnosis: Adhesions which kinked gut in places. Pylorus blocked by adhesions. No carcinoma.

Case 33. Clinical diagnosis or question: Ulcer? Clinical points: Two years ago gas pains. No vomiting. Pain on right just below navel. Lost 10-15 lbs. weight. Radiological diagnosis: Duodenal ulcer with beginning pylorostenosis or gastric ulcer at pylorus. (Peripyloric ulcer.) Radiological points: Six hours residue. Operative diagnosis: Gastric ulcer at pylorus.

Case 34. Clinical diagnosis or question: Ulcer? Adhesions? Clinical points: One year ago appendectomy. ' Pain has no relation to eating. Radiological diagnosis: No radiological sign of gastric ulcer. Probable adhesions about stomach, cecum, proximal part of transverse colon. Chronic constipation of ascendens type. Radiological points: Stomach and colon transversum only fairly movable. Operative diagnosis: Adhesions from cecum to belly wall. Jackson's membrane about colon.

Case 35. Clinical diagnosis or question: Abscess of liver. Amebiasis? Carcinoma ventriculi? Clinical points: One year diarrhea with mucus, blood, pus. Rapidly growing tumor in right hypochondrium for last few days. Radiological diagnosis: Tumor probably connected with liver. Radiological points: Stomach pressed far to left. Indentation by liver. Antrum formation of stomach distorted. Operative diagnosis: Liver abscess.

Case 36. Clinical diagnosis or question: Carcinoma of stomach? Gallstones. Malaria? After stool and radiological examination—malignancy? Adrenal disease? Clinical points: Gallstone attacks in previous years. Nausea, retching, belching after meals, six months' duration; 50 lbs. loss in last six months a/c daily diarrhea. Asthenia. Temperature 102° every second night. Negative malarial parasites. No occult blood. Stool (Schmidt test diet) type of early toxic diarrhea. No abnormal elements. B. P. 150 mm. Radiological diagnosis. No radiological signs of carcinoma of stomach. Tuberculosis of right apex. Radiological points: Rigidity of upper part of stomach. Operative diagnosis: Gallstones. Hypernephroma.

Case 37. Clinical diagnosis or question: Ulcer? Clinical points: Twenty-two years suffered off and on with gas pains after meals. Worse for last six months. Occasional vomiting. Radiological diagnosis: Callous penetrating ulcer of stomach. Organic hour-glass stomach. Radiological points: Niche (hole in the wall of stomach). Lower sack of stomach takes 25 minutes to fill on two successive days. Operative diagnosis: Ulcer penetrating into pancreas. Large dilated stomach with infolding but no hour-glass stomach.

Case 38. Clinical diagnosis or question: Vis-

ceroptosis. Clinical points: Appendix operation two and a half years ago. After operation vomiting. Since then miserable. Radiological diagnosis: No radiological signs of gastric or duodenal ulcer nor of any stenosis. Constipation of ascendens type. Radiological points: Bulbus duodeni perfect. Operative diagnosis: No gastric or duodenal ulcer. Visceroptosis.

Case 39. Clinical diagnosis or question: Appendix? Ulcer? Carcinoma? Clinical points: Five years ago severe pain in abdomen. Since one year severe pain in epigastrium right after eating. Nausea in mornings. No pain if he doesn't eat. Never vomited. Lost 20 lbs. in last four weeks. Radiological diagnosis: No radiological signs of active gastric ulcer or neoplasm. Probable chronic appendix (retrocecal?). Radiological points: Point of maximum pain coincides with cecum. Operative diagnosis: Old healed ulcer of stomach connected by band of adhesions with gallbladder. Chronic retrocoecal appendix.

Case 40. Clinical diagnosis or question: Gastric ulcer with perforation? Carcinoma ventriculi? After radiological examination—gastric ulcer with perforation? Retroperitoneal sarcoma with metastases. Clinical points: Acute pain in left hypogastrium for several months. Pain constant. Two months ago testicle removed. No blood in stools. Age 27. Rapidly growing tumor in left hypogastrium for several days. Radiological diagnosis: Large dilated stomach. Extraventricular tumor. Radiological points: Pseudo-filling defect. Operative diagnosis: Retroperitoneal sarcomatous metastases (cystic and solid).

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Discussion.

Dr. W. C. Alvarez: There is little to add to this interesting paper. I am only afraid that in confining himself so closely to this phase of the subject, Dr. Lippman may seem to have made the subject clearer than it really is. I think that those who do this work find that the average case is not as clear and as beautiful as these that we have had described to us tonight. So many show either nothing definite or functional disturbances which may or may not have pathological significance. Dr. Lipman's material may be unusual in that it is largely referred to him by surgeons who would be more likely to get severe, long-standing surgical cases. Statistics compiled by Fenwick, Friedenwald and others show that about 85% of patients with gastrointestinal disease have functional disturbances. Granting that every year better diagnostic methods transfer a number of cases to the organic column, still, I think even in consultant practice, we will find eight or nine doubtful or normal cases to one in which there is a beautiful ulcer or carcinoma defect, hour-glass stomach, etc. Even in the ulcer cases I believe we will oftener find disturbances of function than craters and signs of perforation.

A word as to six hour stasis as diagnostic of organic lesions at the pylorus. I frequently find one or two ounces of bismuth in the stomach six hours after a meal when no pyloric lesion can be found. This may be present on occasions and absent on others. Very interesting is the fact that the stomach will empty rapidly in the first forty-five minutes and then there will be practically no change in the remainder for six to eight hours. In these cases I believe the trouble is to be found in the intestine. I saw recently a case in which a half ounce of bismuth remained in the stomach twenty-three hours. There was no sign of ulcer or carcinoma and the other findings were against such a diagnosis. Besides, she had had stasis symptoms for five years. Fig-skins were vomited eight days after she had eaten them. What she had was a markedly prolapsed uterus which I believe can explain the findings.

Dr. Lippman, closing discussion: My material is divided into consultation work chiefly from one group of surgeons and several groups of medical men—I average about 72% nonoperative and 28% operative cases. Dr. Alvarez mentions one or two ounces of bismuth residue after six hours—I only use one and one-third ounces for a meal and this would constitute a complete retention. I wish to reiterate I have never seen complete retention nor a large (I emphasize the word large) residue without organic lesion of some kind. The case which Dr. Alvarez quotes is unfortunately not an operated case. I confined my talk to operatively confirmed diagnoses. I think with the history which he offers and the findings that he might have found as I have in several similar cases reversed motion of the duodenal contents (so-called antiperistalsis) and duodenal ulcer of the lower part of the duodenum.

GENERAL PARESIS AND ITS RELATION TO SYPHILIS, WITH A REPORT OF THE PATHOLOGIST OF NAPA STATE HOSPITAL.

By A. W. HOISHOLT, M. D., Medical Superintendent, Napa State Hospital; Clin. Prof. Psychiatry, Stanford University.

General paresis, general paralysis of the insane or softening of the brain was first spoken of by Willis in 1672, but was not recognized and described as a disease entity until 1822, when the French alienist, Bayle, pronounced the somatic and psychic symptoms manifestations of one and the same disease. From 1822 to the middle of the last century, the efforts of investigators were centered on clinically outlining the disease-picture. At the end of the fifties, observations began to be made of the frequent occurrence of syphilitic infection in the history of general paralytics. Esmarch and Jessen in 1857, Steenberg in 1860, and Jespersen in 1874 first drew attention to this relationship; the latter in an article entitled *"Is Progressive General Paresis Due to Syphilis?"* Careful statistic researches in this direction were later made by Westphal, Erb, Fournier and Krafft-Ebing, and in the course of years, the percentage of general paresis, showing a history of probable syphilitic infection, gradually rose until it reached 85 to 90%, and in the cases of juvenile paresis, even higher. The medical profession was therefore quite ready to accept the results which were established by the Wassermann and Noguchi reactions, the Nonne—Phase I reaction of globulin increase, and the increase of the lymphocytes in the cerebrospinal fluid. Since these sero-diagnostic tests (known also as "the four reactions") have been recognized as indicators of luetic nerve degeneration, the assertion that "Without a previous syphilitic infection, there can be no general paresis" has become generally accepted.

The question was finally definitely decided when Noguchi a couple of years ago succeeded in demonstrating the finding of treponema pallidum in the brain in about 25 per cent. of 200 cases of general paralysis and especially when he, over a year ago, was able to produce typical syphilitic

sclerosis containing the syphilitic micro-organism in the testes of rabbits by inoculation of an emulsion of the brain obtained from a paretic individual.

Although the direct relation of syphilis to general paresis has thus been established as an absolute fact, we are not able to explain why it is that paresis only occurs in about 2 to 5 per cent. of all cases. Noguchi found in experiments on rabbits that, while luetic disease made its appearance in all body organs soon after inoculation, it took three to five months before the lues invaded the brain, which he ascribes to the great power of resistance of nerve tissue to the invasion by the treponema. The specimens of the latter found in the brain show an attenuation probably indicating a diminution of virility. It was thought by Kraepelin that intermediary products of decomposition, as in metabolic disease, may play a role in this resistance; especially has this been suspected in cases where alcoholism complicates lues. The influence of alcohol upon fatty substances may, according to Dr. Dedichen of Norway, cause a deterioration of the network of lipoid substances, which penetrates the living cell and acts as a protection preventing the decomposition of the cell-contents by warding off the contact with substances foreign to the cell-body. According to reesarch work by Bang, the lipoids are of perhaps greater importance to the human organism than the albumins, playing a role in the action of all enzymes and ferments.

But besides alcohol, there are other factors which may play a role in paresis. Some writers claim that general paralysis is a disease of civilization. Uncivilized peoples are but little or not at all susceptible, or only become so after they have become civilized. It is a well known fact that early generations of negroes, after immigration into the United States, seemed free from paresis, although they often became infected with syphilis. It is in the later generations of the colored race that paresis has been found increasingly prevalent. The same is true of Chinese and Japanese. I have observed but one or two cases of paresis among about 350 Chinese admissions to the Stockton State Hospital. About 80 per cent. of the inhabitants of Abyssinia are said to be syphilitic, but paresis is not met with there. Norway and Iceland are said to be almost free from general paralysis. Westhoff, a German writer, is quoted by Dedichen as saying that he looks upon the disease as specifically one of the German race. He amusingly concludes that the higher the anthropological standing of a race, the more apt is such race to fall a prey to the disease.

A secondary influence upon the course of a case of general paresis is that of endogenesis or of endogenetic psychoses. Most authors speak of a hereditary disposition in 40 to 50 per cent. of the cases. General paralysis has been divided into different forms. Kraepelin speaks of a demented, a depressive, a stuporous, a katatonic, a paranoid, an expansive, a circular, an agitated and a delirium tremens like form, which apparently is an expression of the mode of reaction of the individual to the morbid process. In many instances it would even seem that the varied psychotic pictures can only be explained by an accidental coincidence of two diseases, perhaps by another form of psychosis paving the way for the paresis or perhaps by the paralytic incipiency setting free a latent predisposition to insanity.

Notwithstanding the above recent developments in the relationship of lues to paresis, an understanding of the form of this relationship has not been reached. It has long been recognized that paresis does not belong in the tertiary stage of syphilis, and it was many years ago put in a category with tabes dorsalis as a para or metasyphilitic disease. Strümpell compared the relation of metasyphilitic disease to syphilitic infection with that of post-diphtheritic paralysis to the diphtheritic throat infection. It illustrates this relationship but the parallel is not completely covered when considering the progressive course of metasyphilis. Symptomatologically, we are still in the dark. With all clinical and serological tests at our disposal, we still encounter great difficulty in the differential diagnosis of lues cerebri; especially between the disease pictures, which have been termed syphilitic pseudoparalysis, where there is a diffuse meningo-encephalitis, and paresis. No absolute differentiating symptoms have in fact, to date, been discovered. It is only by weight of evidence that one can distinguish them, and in individual cases, one may sometimes be absolutely unable to decide. A mental deterioration with the occasional presence to a more limited extent of somatic symptoms is more general in paresis; while the recording faculty is less faulty, the intelligence defects more prevalent in spots only, and the judgment less deteriorated in the cerebrospinal lues than in paresis. In the former there is lacking, as Professor Hoche of Freiburg, Germany, puts it, the peculiar veil which it is customary to find enshrouding the whole mental being of the general paralytic. In the former case, the patient likewise does not himself look with such complete indifference upon severe somatic symptoms present; the pseudoparalytic may even be hypochondriacal in reference to these symptoms.

As to the somatic symptoms themselves, they do not serve as a criterion between the two. The pupillary symptoms may be the same; the speech disturbance likewise, though the cerebral syphilitic patient is more apt to be aphasic or show speech defects of a bulbar type. Irregularity and rapid change in the course of the symptoms, and a slow development of focal symptoms without apoplectiform attacks, speak more for brain syphilis. A gradual progressive increase in symptoms characterizes the latter, as a rule, only up to the time when antisyphilitic treatment is instituted.

Many physicians make use of the favorable result or failure of an antiluetic treatment as a means of distinguishing between the two forms. As this therapeutic test frequently gives positive results in brain lues, it is well indicated, even if it sometimes fails where the syphilitic process is very diffuse, perhaps because of its non-reaction to our present syphilis therapy or because the treatment was started too late.

In most cases, however, the differential diagnosis

is dependent upon a careful weighing of the different viewpoints and as Hoche says in his recent work, "there will undoubtedly remain a certain percentage of cases in which the most experienced will not be able, with certainty, to make the differentiation between brain syphilis and paresis during the life of the patient, nor will he in such cases any longer be able with certainty to differentiate them by post mortem findings."

With regard to "the four reactions," it may be said that a high cell-count was formerly considered indicative of brain syphilis, but there are many exceptions. Dr. Harrison reports in 22 cases of paresis found among the patients admitted to the Napa State Hospital during the first six months of 1914 that the cell-count was in six cases over 100; in one case, 322, and in two others, 170 and 182, respectively. The variations in the remaining "three reactions" do not at the present day give one the means of differential diagnosis between these two conditions (brain syphilis and general paresis), which at one time was the current belief.

In July, 1897, I published in the "Occidental Medical Times" a statistical report of 69 cases of general paresis admitted to the Stockton State Hospital during seven years, inclusive of the years 1890 to 1896. Out of 1,345 first admissions the average percentage of paresis was 5.13 per cent. Since then no statistical reports have been made showing the prevalence of paresis in California. In publishing the appended statistics from the Napa State Hospital, covering the period since I assumed charge of the institution, it is realized that the figures are small and the period of short duration, extending over but one year.

The thirty-four cases have all been studied serologically, as well as clinically, giving the subject of the differentiation of the syphilitic pseudo-paralysis from general paresis a careful consideration.

Period of admission.	Males admitted	Females admitted	Total admitted	Number paretic men	Number paretic women	Total number paretics	Ratio women to men	Total percentage among men and women
July 1, '13, to Jan. 1, '14.	107	53	160	11	1	12	1:5.5	7.5
Jan. 1, '14, to July 1, '14.	159	71	230	20	2	22	1:4.46	9.56
Tot. average.							1:4.81	8.71

According to this table, 8.7 per cent. of all mental cases admitted during the last year have been cases of general paresis. In addition to the 34 cases of paresis admitted during the year, we have received five cases diagnosed as cerebrospinal lues. Two of these are women: one with a history of a hemiplegic attack a few months before admission, and complete restoration after antiluetic treatment; the other with history of miscarriage, certain somatic symptoms; sluggish pupillary reaction, absent left knee-jerk; fully oriented; no mental deterioration; Wassermann triple x in blood and liquor; cell-count 136, reduced to 35 after salvarsan treatment. The case appears complicated with a manio-depressive psychosis. Of the three men one has a history similar to the one just reported. A second case is an alcoholic pseudo-paralysis with lues, with high cell-count; now fast improving. The third is also an alcoholic with symptoms dating back a number of years, and all four reactions positive. Even if the five brain-syphilis cases be added to the paresis, we get for the year a percentage of 10 per cent., which is considerably less than percentages reported abroad, where they have varied from 15 to 22 per cent. Women admitted to Napa State Hospital, judging by the above report (1:4.8), are 50 per cent. less frequently sufferers in proportion to men than are women in Europe.

Napa State Hospital, October, 1914.

LABORATORY REPORT, NAPA STATE HOSPITAL.

By W. T. HARRISON, M. D.

During the biennial period ending June 30, 1914, the Wassermann reaction has been applied to the blood and spinal fluid only in suspected cases, but beginning with July, 1914, a routine examination of the blood serum is being made in all new admissions to the Napa State Hospital. An effort is also being made to extend this examination to the families of patients showing positive reactions.

On June 30, 1914, there were present in the hospital 52 patients showing positive Wassermann reactions in both the blood serum and spinal fluid—44 men and 8 women. Of these, all but three showed a definite increased globulin content in the spinal fluid, and all showed an increased lymphocyte count, ranging from 12 to 380 per cu. mm., more than 100 lymphocytes being observed in 13 cases. One additional case, a man, showed a positive reaction in the blood serum, but died before the spinal fluid could be examined. Post mortem examination showed the characteristic brain changes of paresis.

The original Wassermann reaction is employed, using as antigen a cholesterinized, alcoholic extract of human heart muscle. This reagent has been accepted as the most reliable, after having compared the results obtained with various extracts, including alcoholic extract of luetic foetal liver, alcoholic extract of normal organs, and the acetone insoluble fraction; the last two were found to yield unreliable results and were early discarded.

A series of 157 specimens, both blood serum and spinal fluid, were examined, using both the cholesterinized and the luetic extract in each case. Eighty-eight of these specimens, 53 blood serums and 35 spinal fluids, yielded positive results with the cholesterinized extract; 78 specimens, 48 blood serums and 30 spinal fluids, yielded positive results with the luetic extract. Lues was present without question in all cases reacting positively to

the cholesterinized extract, as evidenced by definite involvement of the central nervous system.

The intensity of the reactions follows:

Blood serum.

	Complete inhibition	Partial inhibition	Slight inhibition
Cholesterinized extract..	46	5	2
Luetic extract	36	5	7

Spinal fluid.

	Complete inhibition	Partial inhibition	Slight inhibition
Cholesterinized extract..	30	4	1
Luetic extract	21	5	4

It will be observed that in the case of the blood serum 5 specimens responded positively to cholesterinized extract and negatively to luetic liver; of these, 2 showed complete, 1 partial, and 2 slight, inhibition to cholesterinized extract. Five spinal fluids also showed negative results to luetic liver, while to the cholesterinized extract, 4 showed partial, and 1 slight, inhibition. In all cases the maximum quantity of blood serum used was 0.1 c.c., and of spinal fluid 0.2 c.c.

The objection that the cholesterinized extract is perhaps too sensitive has not been proven in our experience, as in all cases we have been able to obtain a definite history of infection or clinical or post-mortem evidence of lues.

Results obtained in the examination of a total of 300 cases, together with the case of preparation and comparative permanency of the cholesterinized extract has caused us to use it exclusively in routine examinations.

Napa State Hospital, October, 1914.

THE HARRISON ANTI-NARCOTIC ACT.

By FELIX LENGFELD, San Francisco.

For many years our state legislatures have been passing laws to limit the use of habit-forming drugs. In 1913 and 1914 no less than 18 states passed or strengthened anti-narcotic laws, and it is safe to say that legislators were no more active in those two years than in the five preceding. Government statistics show that the importation of opium, coca, and their alkaloids remained practically constant, and it seems probable that the quantities smuggled and therefore not appearing in the statistics, increased materially.

It has been stated that in some of the Southern States three-quarters of the adult negroes used cocaine, and it is in those states that the regulations against cocaine were particularly radical, and yet apparently without result. State regulation failed because it was easy to send the drugs from one state to another. If a single state had poor laws or laws poorly enforced, the purveyor of cocaine or morphine could purchase in that state and send the drug into another state where its underground sale was remunerative. If he could not trust the express companies, he could put 100 or 200 ounces into a grip and carry it himself, feeling certain of a profit of $5.00 or more per ounce.

Federal control seemed necessary, and to be effective the law must permit the drug to be watched from the moment it was imported or manufactured until consumed. This could only be done by making it a revenue law. The Constitution of the United States does not permit the Government to do police duty within the state, but it does permit it to make such laws as are necessary to provide revenue, and to make any regulations it shall deem fit in connection with such law. Therefore the enforcement of the Harrison Act is entrusted to the Division of Internal Revenue, and the Act is called a Revenue Act.

Had this been done by a body less august than the Congress of the United States we should be tempted to call it a subterfuge, for nobody believes that the Harrison Act will add a cent to the treasury of the United States. On the contrary, everybody knows that a large appropriation will be necessary to enforce it. We may be sure, however, that it will be enforced without fear or favor.

In this JOURNAL we need only consider this Act in relation to physicians. Under the act, every physician who desires to use, prescribe, or even have in his possession, any preparation of opium or coca leaves (with certain exceptions to be considered later) must register with the Internal Revenue Collector of his district, receiving a registry number, which is his for life unless revoked for cause. He must pay $1.00 per annum, receiving a special tax stamp, bearing his name, registry number, and "This must be posted in a conspicuous place" (Treasury Decisions March 11, 1915, page 50). Having complied with these formalities, he may write prescriptions for opium, coca leaves, or any of their preparations, alkaloids, or derivatives. These prescriptions can be written on any piece of paper or prescription blank, but before filling the druggist must see that they bear the date, name, and address of the patient, and the signature, address and registry number of the physician. The physician is not required to keep any copy of such prescriptions. The physician therefore has no difficulty about getting these drugs for his patients, but should he want them for his pocket case, handbag, or office, the process is somewhat more complicated. Upon payment of a dime he can obtain from the Collector of Internal Revenue a book containing 10 duplicate order blanks. Each of these blanks bears his name, address and registry number, and he is responsible for them, must see that they are properly used, and must keep the duplicates on file for not less than two years. If he wants a tube of heroin tablets or an ounce of cocaine solution for his office he must fill in one of the blanks, take an exact copy, and send the blank to the druggist, who must keep it on file for at least two years. Even then the physician cannot do as he pleases with the heroin tablets or the cocaine solution. Section 2-A of the act provides "that the physician may give or distribute any of the aforesaid drugs to a patient in the course of his professional practice only, provided that he keep a record, showing the amount of drugs dispensed, the date, the name and address of the patient to whom such drugs are dispensed or distributed, except such as may be dispensed or distributed to a patient upon whom he may personally attend, and such record

must be kept for a period of at least two years." This section is certainly ambiguous, and it is interesting to note the interpretation placed by the Division of Internal Revenue upon the term "personal attendance." I quote from Treasury Decisions March 11, 1915, as follows: "A physician must actually be absent from his office and in personal attendance upon a patient in order to come within the exemption of Sec. 2, Paragraph A of this Law. Only such drugs as are personally administered by a physician to a patient when away from his office are exempt from record, excepting that an oculist, aurist, or other specialist using minute quantities of drugs may keep a record of the day a stock solution was made and the day it was exhausted." This is not the interpretation which would be placed upon this section by most people, although it probably conforms closely to the intent of the act. However, it has all the force of law, and the physician must remember that he must keep a record of all such drugs dispensed, distributed or administered in his office, or left to be administered during his absence.

There seems to be a widespread belief that the new law restricts the liberty of the physician to order opium or coca preparations. There is absolutely nothing in the law which restricts the amount he may prescribe for a bona-fide patient, and there is nothing in the law which prevents him from using any of these drugs when he thinks it necessary, even if the patient be addicted to the habit-forming drug. He must remember, however, that this law does not set aside any state law, and that therefore the present state law prevails on this point.

A physician's prescription cannot be filled by the druggist unless it bears the patient's name and address, the date, the physician's address and registry number, and is signed by the physician with his full name. It has been ruled that the physician's signature must be such as would be used on a bank check or other legal paper. His surname alone will not do. It is assumed that the physician himself will fill in the name and address of the patient, as should a fictitious name and address be filled in by anyone else through any neglect on his part, he may be held responsible, and subjected to more or less inconvenience.

Prescriptions may not be refilled, but must be re-written each time, and an order on the druggist to refill "Prescription No. ———" is invalid, even though properly signed. On the other hand, a prescription for a private formula or proprietary preparation coming within the act may be filled even if the narcotic drug is not mentioned. Liniments or ointments containing opiates do not fall within the scope of the act if they contain sufficient other drugs to prevent them from being taken internally, but this does not apply to cocaine or to eye waters, ear drops, enema or injections. No special prescription is required in any mixture containing less than two grains of opium or one-quarter grain of morphine or one-eighth grain of heroin or one grain of codeine to the ounce. Thus a prescription one-half grain of codeine to a tablespoonful dose may be repeated indefinitely, but if it call for five-grain capsules which contain 1/12 grain of codeine, the physician may rest assured that it will not be repeated without his written order. This is not consistent, but it is a feature of most of the state narcotic laws. There is one thing in this law which certainly will commend itself to the physician and reconcile him to its red-tape, and that is that he may now give a prescription for morphine, cocaine or heroin, knowing absolutely that it will be filled only once, and that it will not be refilled without his consent.

There has been some question as to the right of a nurse to carry narcotic drugs. It has been ruled that nurses cannot register, and therefore cannot have any narcotic drugs in their possession except under direction of the physician, and for use in a particular case. The physician will therefore order narcotic drugs which he desires a nurse to use only in such quantity as will be used on the particular patient under the nurse's care.

It is too early to predict whether or not this federal law will succeed where state laws have failed. Already attempts have been made to smuggle cocaine into this country, and it will require the combined vigilance of the Customs and Internal Revenue Departments to prevent this.

From carefully reading the regulations and from conversations with some of the officials of the Revenue Department, I feel certain that there will be no attempt on the part of anyone to harass the physician or in any way interfere with him in the legitimate pursuit of his profession. On the contrary, there seems to be a feeling on the part of the Government officials that the physicians generally will see the advantages to the public of this law, and will cheerfully co-operate in its enforcement.

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COME!

FUNCTIONAL DEFECTS OF THE THYROID IN RELATION TO NEUROTIC CONDITIONS.*

By H. W. WRIGHT, M. D., San Francisco. (Report of Case.)

As time goes on the literature of the ductless glands increases to an astonishing degree. But exact and certain knowledge as to the functions of these glands and indications for treatment with extracts of them does not increase proportionately. With regard to the thyroid gland our knowledge has attained a more secure basis and when we have the totality of symptoms or even a few pronounced symptoms of Grave's disease, myxedema or cretinism to deal with we no longer need to feel in the dark either as to diagnosis or treatment. It is not with these clear cut entities that this article is concerned but rather with the more obscure symptom-complexes which appear to be the result of malfunction of the thyroid gland and especially with those symptoms referrable to the effect of this malfunction upon the nervous system.

In any case of nervousness there is a multiplicity of causative factors and back of all a defective mental attitude toward life in general or toward the particular circumstances of life which happen to confront the individual patient. To say that the thyroid gland is responsible for such a host of symptoms as these neurotic patients suffer from would be absurd; to say that it is responsible for any of them would be hazardous if we did not have good reason to know that unhealthy emotions do surely affect the secretion of the gland, either causing excessive, diminished or perverted secretion. (Oppenheim.)

We also are justified from clinical experience as well as laboratory research in believing that the atrophy of the generative organs and the suprarenal glands incident to that period of life known as the presenile or involution period has an effect upon the secretion of the thyroid and that in some cases this effect is abnormal, i. e., that the thyroid either fails to atrophy synchronously and to a parallel degree with the gradual atrophy of the generative and suprarenal glands or that it hyposecretes to an undue degree because of the changes in these structures, and thus there is a disturbance in the balance of secretion of all the ductless glands.

The influence of the female generative organs upon the thyroid is seen in pregnancy and the menstrual period at which times there is swelling and perverted secretion of the thyroid. Thyroid extract is now used in eclampsia with benefit; puerperal mania often resembles the delirium of Grave's disease. Atrophy of the ovary resulting from disease or from the menopause or removal of the ovaries results in neurotic symptoms which are characterized by instability of the vaso-motor system, local edema, headaches, lassitude, or unrest, vague neuritis pains, tachycardia and tremor, dry skin, pruritus, cold extremities, sudden giving way of muscular power when walking, etc., some of which symptoms we know are significant of excessive thyroid secretion and some of an abnormally diminished thyroid secretion. In pure "neurasthenia," especially that which has begun late in life after the period of greatest activity and following emotional disturbances incident to the vagaries of fortune in captains of industry, or in those who have otherwise lived strenuously in professional or artistic fields of labor, we find frequently the following complex: a low blood pressure, an excitable pulse, periods of profuse perspiration at night, cold, clammy skin during the day, urticarial eruptions, neurotic edema of transient nature, alternate flushing and pallor of the facial blood vessels, hypo-tonicity of the intestinal muscles resulting in intestinal stasis, a great susceptibility to fatigue of all muscle function and of cerebral activity. Such symptoms have not been present during youth or early manhood in the majority of these patients; in some, however, we do get a history of previous attacks of "nervous breakdown" accompanied by some of the symptoms above mentioned, occurring at puberty and afterward, with an antecedent history of delicate health during infancy and childhood. These conditions may possibly be due to imperfect development of the thyroid.

The vaso-motor symptoms of neurasthenia just mentioned could not occur if the adrenal secretion were abundant nor could they occur if the thyroid secretion were not present in greater proportion in relation to the adrenal secretion and in greater proportion in relation to the testicular or ovarian secretion than occurs in normal health. There are also certain mental states, some of whose symptoms I feel can be explained upon the basis of defective function of the ductless glands and consequently upon hyper—hypo—or perverted secretion of the adrenal and hence of the thyroid; or to use a more comprehensive term, upon dysthyroidism (e. g., mania and melancholia and the mild dementia which accompanies arteriosclerosis, also dementia praecox). Sajous ascribes to the adrenal gland the function of a regulator of the secretion of all the other ductless glands by reason of the oxidizing and blood-pressure raising substance present in its secretion. Be that as it may the clinical pictures just described are consistent with a defect of the thyroid secretion.

The study of these conditions and the treatment of them is rendered especially difficult in most instances because of the fact that there are symptoms present in the same patient, relative to both hyposecretion and hyper-secretion, and therefore to perverted secretion. Until further research has revealed to us just what chemical substances are lacking or too abundant in the secretion of the thyroid in these obscure forms of thyroid disease, we can only treat them experimentally and palliatively. But this lack of exact knowledge relative to therapeutic indications makes the problem still more interesting and it is incumbent upon us to examine every medical case with the idea of ascertaining the presence of symptoms referable to the malfunction of the glands of internal secretion, to

* Read before the Santa Barbara County Medical Society, June 8, 1914.

compare notes and to standardize the results of our observations so as to have a working basis for further research.

The following patient illustrates some of the obscure and puzzling manifestations of partial myxedema and partial Grave's disease, cases of which have been reported by Elliott of Chicago (*Journal of A. M. A.*, May 30, 1908), Nichols of Washington (*Journal of A. M. A.*, April 10, 1909), Osborne of New Haven, and many writers in the German and French literature. The patient came under the writer's care on May 18th of this year with the following history, which is considerably condensed from that originally obtained:

The patient is a lady of 58 years, who has lived in Detroit most of her life. She was widowed and left with two sons when a young woman and had until a few years ago been obliged to work very hard as a teacher of music in order to give her boys an education as well as to maintain her living on the level to which she had been accustomed. She can be described as to mental make-up by saying that she is of a very sensitive, alert, ambitious and proud nature with "the artistic temperament," which has not suffered with patience many adversities affecting her emotions and many physical disorders affecting her health. About 11 years ago had acute appendicitis with abscess and prolonged convalescence during most of which she worked hard at her profession, keeping house at the same time, conducting a large musical conservatory and writing musical reviews. This resulted in a breakdown which was called acute nervous prostration and which was accompanied by pronounced cardiac weakness and rapidity of the heart's action. While taking a rest cure she developed acute gall-stone colic and was not operated on. In a few months went to work again very strenuously, but developed a disturbance of vision which was competently diagnosed as "acute glaucoma," and double iridectomy was performed. This operation and the fear of blindness was a great nervous shock to her, she says, and while recovering from it in a sanitarium she again had gall-stone colic, was put on the operating-table, but collapsed before operation could be performed and had to be resuscitated by artificial respiration. In three months was hard at work again and doing well, when she began to be depressed and easily fatigued, also restless and uneasy in mind, unable to concentrate and suffered from palpitation of the heart. She consulted a specialist on the thyroid. He pronounced her condition due to excessive thyroid secretion, and under family physician's observation she took a course of treatment with thyrodectin. She improved, but was unable to take up work again and came to the Pacific Coast two years ago to recuperate. She went home after a year much improved, but in a few weeks began to complain of undue fatigue upon walking, especially that her knees would suddenly give way. She again became depressed and restless and very discouraged, once attempting suicide by taking 30 grains of veronal. She has been out on this coast again since the latter part of April, and for three weeks before I saw her had been suffering from intermittent pain and redness of the left foot, especially when out of bed, which kept her awake at night. Together with this she had complained and still does of sudden giving out of muscular strength at the knees after a short walk, also of fleeting pains in the lower limbs of a neuritic type, insomnia and occasional cardiac palpitation after exertion, also she suffers a great deal from coldness of the hands and feet which is present even on warm dry days to some extent, but which is readily relieved by getting into bed with a hot water bag. She is depressed to the verge of melancholia and has thoughts of suicide.

Examination shows a poorly nourished woman with pigmented skin under the lower eyelids and elsewhere, no visible thyroid, no tremor, heart action rather feeble, but regular and no constant rapidity and no murmurs; blood pressure low (110), and pulse about 80, blood pressure is readily raised by strong emotion; no apparent sclerosis of the artery. The skin and hair are very dry. The extremities are generally cold; the left foot at times presents the typical picture of erythro-melalgia with purpuric spots along the course of the plantar nerves and marked pain on pressure here. The urine is normal. Enlargement of the veins of the neck and dull reddish patches on the face are occasional symptoms. Sudden asthenia frequent. Under administration of calcium lactate on the supposition of the thyroid's secretion being in excess, the parathyroid secretion being proportionately diminished and also because of its benefit in urticaria and angio-neurotic edema there was considerable improvement in the erythromelalgia and under aspirin treatment it was more promptly relieved. The patient is at present resting in hospital and undergoing treatment for insomnia and loss of appetite and for experimental therapy. To sum up we have a history of symptoms of excessive thyroid secretion, viz.: tachycardia, restlessness, and emotionalism, depression of spirits with anxiety and vasomotor instability combined with symptoms now present of diminished secretion such as muscular asthenia, dry skin and cold extremities and neuritic pains, which are not constant symptoms, however. Cardiac palpitation recurs frequently Whether the erythromelalgia is a manifestation of thyroid excess or of diminished secretions cannot yet be determined. However, the thyroid may be said in this case to be working excessively at times and at times not secreting sufficiently but that the predominant condition is an excessive secretion. Or shall we say that other ductless glands, especially the ovarian and adrenal, are atrophied to such an extent that this has caused a modification in the thyroid secretion? The prognosis in this case should not be necessarily bad for as time goes on the excessive activity of the thyroid may be expected to subside and the patient's whole organism to become gradually adapted to the changes in the ductless glands incident to advancing age. Much, of course, will depend upon regulation of the patient's life, both physically and mentally; her emotional life especially will need proper safeguarding and satisfying channels for expression.

SUCCESSFUL METHODS OF ATTACK ON MALARIA IN CALIFORNIA.

By PROFESSOR WILLIAM B. HERMS (University of California).

In spite of the fact that about thirty-five years have elapsed since Laveran discovered the causative organism of malaria in the red blood-cell of man, and about twenty-seven years since Ronald Ross and co-workers revealed the rôle that the Anopheles mosquito plays in its transmission, and notwithstanding the fact that malaria is now perhaps one of the best known diseases, there is still much left to be accomplished in its control. Furthermore, the ignorance and false notions of otherwise intelligent persons with regard to malaria is astonishing.

The average man adheres tenaciously to the long disproven notions that malaria is contracted by drinking "bad water," or by eating over-ripe fruit, or by breathing the air from swamps or newly turned soil, by over-exertion, etc.,—all of which

have, it is true, their proper bearing on the subject. Transmission by mosquitoes is commonly regarded as a vagary held by visionary scientists. There is little to wonder at, when it is known that there are still some physicians who hold just such views as above expressed.

The most effective measures for the control of malaria are based on a public knowledge of the cause and mode of transmission of the disease. A public ignorant of facts is difficult to work with. The facts relative to the etiology and epidemiology of malaria are so well in hand that this knowledge may *safely* be placed in the hands of the general public. Properly conducted newspaper publicity is a potent means of education, and editors and reporters should be given assistance in order that the matter may be correctly and wisely placed before the public through the columns of newspapers and magazines.

Popular illustrated articles as appeared from time to time in the Oroville (California) newspapers during the campaign in that community several years ago, did much to further the cause.

The economic importance of malaria needs to receive particular attention, and at all times facts before hazy generalizations. As has been well said, "It is the constant dropping of the water of publicity that wears away the stone of indifference."

The man engaged in malaria control operations must be essentially a teacher. Facts must be presented in a form that an average person can grasp, and this requires more than ordinary knowledge of the subject on the part of the informant, and some skill and tact in presenting this knowledge. The transmission of disease by insects in the simplest possible manner is mystery enough to an average intelligent person, and it must be borne in mind that the transmission of malaria by the Anopheles mosquito is a highly involved biological process. No wonder people are skeptical! The ignorance of intelligent citizens in matters of disease transmission in general is appalling to say the least. It is to be hoped that our schools and colleges are at work in this vastly practical age in turning out intelligent citizens.

The sooner the general public is made cognizant of the mysteries of the scientific laboratory, and the sooner the scientist desists from expressing himself in occult, mysterious terms, the sooner will the public come to understand the reasons for a given course of action in disease prevention and the sooner will his efforts bring results. Parenthetically it may be said that the dignity of the scientist will suffer little in the process. Even so, love and respect of fellow beings is much more to be preferred than a certain mysterious scholastic dignity so much coveted by certain individuals.

Perhaps no state in the Union has attempted to give its citizenship a better knowledge of insects and their relation to disease than has California. This has been accomplished mainly by means of the Agricultural Demonstration Train during the several years of its running in the state beginning with 1909. Half a car of exhibits under the heading of "Public Health" called attention to certain important diseases, stressing methods of control and prevention. A demonstrator was always in attendance and the major attention was given to malaria. Practically all parts of the state reached by railroad were thus touched and the process repeated several years in succession. Much interest was thus aroused and the writer has been able to do much personal work and having seen the local conditions is thus enabled to render more practical assistance in offering wise recommendations.

Through newspaper publicity, lectures, exhibits and personal work it has been possible to establish six or seven organized campaigns against mosquitoes and malaria in various parts of the state as far south as Kern County and as far north as Tehama County, including Placer and Butte Counties.

The prevalent type of malaria in California is the *tertian* traceable to *Plasmodium vivax; aestivo-autumnal* malaria traceable to *Plasmodium praecox* occurs much less frequently; and the *quartan* type (*Plasmodium malariae*) has, as yet, not come to my notice.

Malaria is restricted to certain well defined areas in the state. That portion of the coastal counties bordering directly on the Pacific Ocean is free from endemic malaria,—this includes San Francisco and Los Angeles, the great metropolitan areas of the state. Malaria is virtually unknown south of Tehachapi.

The death rate for the United States due to malaria in 1910 was 4.8 per 100,000. Using that as a basis and determining the malaria death rate by counties it is not difficult to locate the points of greatest prevalence. The State Board of Health Reports provide statistics which show that the 1910 death rate for the Shasta-Tehama-Butte area was 46.8 per 100,000; the Placer-Sacramento-San Joaquin area was 20.4 per 100,000; the Fresno-Tulare-Kern area 8.9 per 100,000.

These nine counties out of the twenty-four in which malaria exists have about three-fourths of all the malaria. Twenty-eight counties are free from malaria. Collections of mosquitoes have been made in many of the counties all over the state and the distribution of Anopheline mosquitoes coincides with the distribution of malaria. As far as I have been able to secure specimens few or no Anophelines have been found in the counties free from malaria. The reason for this is either due to low average temperature, or the lack of proper breeding places. There seems no reason why Anopheline mosquitoes should not develop in the Imperial Valley, for example, now that ample water for breeding purposes is available. The introduction of Anopheline mosquitoes seems to be the only thing needed, if followed by the introduction of malaria cases, to establish the disease. This is the experience throughout the northern part of the state, i. e., with the introduction of irrigation there also follows malaria. That irrigation alone cannot be the cause is evidenced by the great amount of irrigation south of Tehachapi and the practical absence of malaria in that section. The introduction of malaria into

Placer County was traced to the building of the overland (Southern Pacific) railroad through that county. Previous to that time malaria was said to be unknown in that section. There seems every reason to believe that Anopheles mosquitoes existed there previous to that time and that these became infected through the Italian laborers employed in the construction of the railroad.

The Sierra foothills form an essentially healthful area, but for malaria, and it is interesting to note that absences from the public schools are largely due to this disease. In 1909 before malaria control work was begun the absences in a given school amounted to 124 days due to malaria, in 1910 when control work was being carried on in that district, absences due to malaria were reduced to 68 days, or a reduction of 45% in one season. In other districts malaria was as prevalent as before.

The following statistics, furnished the writer by the State Board of Health, give evidence of the success with which malaria is being combated in counties in which crusades have been inaugurated:

Table I.

Showing deaths from malaria in certain counties in which active organized malaria-mosquito campaigns have been waged. The educational value and example of the individual crusade upon the entire county must be taken into consideration.

	1909	1910	1911	1912	1913 *
Butte	17	15	11	8	6
Kern	4	7	2	1	2
Placer	5	3	7	1	3
Tehama	4	10	3	2	4

* Incomplete returns.

The most vigorous crusades were conducted during the years 1911 and 1912, which is evidenced by the number of deaths shown for these years in Table I. During the latter part of 1912 and all of 1913 the campaigns were in the hands of the respective communities, all scientific assistance having been withdrawn owing to lack of funds to employ trained inspectors—the result is at once evident in the 1913 statistics.

The following table indicates the existing condition in certain malarial counties in which no organized systematic crusades have been conducted. The increase or maintained level in the number of deaths from year to year due to this disease is clearly shown. (See Table II.)

Table II.

	1909	1910	1911	1912	1913 *
Fresno	7	1	5	5	5
Kings	1	6	8	5	3
Merced	1	2	3	3	2
Sacramento	12	5	7	11	10
Tulare	2	2	6	4	4
Yolo	4	4	6	3	4

* Incomplete returns.

While mortality does not represent the most satisfactory basis for malaria statistics, yet it is the only method at hand for general application until malaria cases are reported as is required by law. Locally, school statistics are very valuable, provided they are properly collected. Broadly speaking, it may be said that each death from malaria represents not less than fifty cases, perhaps nearer 100. There were a total of 112 deaths in California in 1909, 113 in 1910, and 121 in 1911. Thus for the whole State there has been no decrease of malaria, which means that malaria is decidedly on the increase in localities newly settled and in other localities not engaged in control measures. This must be inferred from the tables given above.

It should be noted at this point that California, taken as a whole, has less malaria (about 2% mortality) than has the registration area of the United States as a whole (4.8% per 100,000). This is due to the fact that a large part of California has no malaria while other sections, as noted above, have ten times as much as the average for the whole registration area of the United States.

As to school statistics two examples may be cited as follows: In the Penryn (Placer County) school already referred to above, the total number of absences due to malaria in 1909 was 124 and in 1910 only 68. In the former year no malaria crusade was in progress, while in the next year a fairly well organized campaign was in progress. This represents a reduction of 45%. In other schools located in districts near by where no attention was being paid to malaria control, no difference was noticed for the two years. Again in the Los Molinos (Tehama County) school in which a somewhat different basis for calculation was used, it was found that 75% of the school children were affected with malaria in 1910, and only 20% in 1911, and 17% in 1912.

In attacking the malaria problem in any given locality very careful personal attention is given to local conditions, relative to class of people involved, irrigation, drainage, subsoil, proximity to streams, etc. Recommendations made for one locality may not suit the case in some other locality. A preliminary survey made by a scientifically equipped field agent is absolutely essential. This survey can usually be made in a satisfactory manner in two or three days, and is then followed by an illustrated public lecture, well advertised. At this public meeting, usually among others, a number of lantern slides, showing conditions as they actually exist in that particular vicinity, are shown. Stress is placed upon the economic importance of malaria. For example, it can safely be estimated that a certain community of about 4,000 inhabitants, located in the northern Sacramento Valley, lost something over $74,000 in the year 1911 because of malaria, as follows, druggist bills amounting to $3,327; 500 cases under care of physicians, earning capacity and general efficiency of patients reduced by approximately 50%, involving loss to the employer as well as to the employee; seven deaths representing a definite economic loss; and considerable reduction in real estate valuation in addition.

Emphasis is furthermore placed on the presence of Anopheline mosquitoes, whether few or many, and that the distribution of malaria coincides geographically within the state with the presence of

Anopheline mosquitoes, mainly *Anopheles quadrimaculatus* and *Anopheles punctipennis*. Mosquito control is essentially the plan of action, and here great stress must be placed on the fact that the smaller apparently insignificant breeding places are of far greater importance than are those which are popularly looked upon as significant, namely, large reservoirs, great rivers and other conspicuous bodies of water.

A large proportion of the inland mosquito breeding places are traceable to faulty irrigation methods, particularly north of Tehachapi. In addition to irrigation the breeding of mosquitoes is greatly increased by the many little rivulets resulting from the melting snows of the Sierras, which water spreads out frequently over flat meadows, thus producing ideal situations for the breeding of Anopheles mosquitoes in particular.

Mosquitoes must have water in which to breed, either standing or slowly moving, it may be perfectly clear or it may be vile and filthy, or any intermediate condition. The trouble may be traceable to one or more of many conditions, among these, possibly a break in the ditch causing an inundation of two or three inches over an adjacent pasture, possibly a ditch clogged up with weeds and grass, possibly a leaking hydrant near the packing-house, or improper drainage after irrigation, perhaps a small settling barrel or tank for drinking water, a horse-trough, a can, tub, barrel, broken gourds, abandoned cesspool, etc. These seemingly minor matters are of greatest importance. Toward the latter part of the summer as the river or creek recedes, stagnant pools may be left by the receding water. Any unprotected water standing exposed to mosquitoes for ten days or over is a menace, because the minimum time required for a mosquito to develop from egg to winged insect is about ten days,—twelve days for *Anopheles*.

The writer illustrates all of the above conditions by means of lantern slides made from photographs of actual breeding places. The effect is very satisfactory.

California has relatively no more mosquitoes than have other semi-tropical states; indeed, we should naturally have fewer mosquitoes, and hence, less malaria, owing to our long dry summers.

Permanent methods of control are always preferably applied, namely: Keep the ditch in good order, do not over-irrigate, provide proper drainage, repair leaking hydrants, bury worthless objects which may hold water, cover or screen settling tanks, barrels, etc. Where possible, permanent bodies of water, for example, ornamental ponds, should be stocked with surface feeding fishes, such as gold fish, chubs, shiners, etc.

Where permanent corrections need to be delayed or are impossible, then oil or a larvicide must be applied to the surface of the water to destroy the mosquito wrigglers and tumblers.

If oil is used we recommend a mixture of approximately half crude oil and half kerosene, this can be easily applied by means of a knapsack spray pump, repeating the operation once every twelve days during the summer and somewhat less often in early spring and late autumn. Treated stove oil at about 28° Beaumé is very useful.

It is usually the last brood of adult mosquitoes emerging in the autumn that goes into hibernation for the winter, reappearing in the spring, and is responsible for the early spring mosquitoes and the later new broods. These hibernating mosquitoes, at least for the most part, go into this state without having previously sucked blood. It is essential, to secure the greatest success, to eliminate the last brood during October and November by proper drainage or oiling. As a precaution it is highly desirable to inspect the territory under observation at least once or twice during the winter on warm days between rains in order to discover slowly growing wrigglers which may have been overlooked in the autumn.

The systematic campaign for the spring and summer season should begin not later than March first, though if the above precautions have not been exercised an inspection should be undertaken about the middle of February, and stagnant water oiled if found necessary.

Careful and systematic screening of dwellings and sleeping porches with 1 m.m. wire mesh screen is strongly urged. The use of oil of citronella as a repellant has been urged and put into practice by night laborers in certain localities. The destruction of mosquitoes which may have found their way into the house, particularly sleeping chambers, is, of course, strongly recommended. Thus far mere "swatting" has been practiced, no fumigation having been undertaken.

Quinine prophylaxis with minimum dosage is recommended for persons taking up residence in malarial localities. To prevent wholesale infection of mosquitoes in the absence of mosquito control measures, quinine treatment of the individual must be practiced. The writer is convinced that the usual quinine dosage is overdone, i. e., quite commonly this drug is taken in large doses daily for weeks and even months without the desired effect. Much may be said in favor of the "quinine schedule," beginning with heavier doses at the outset and gradually tapering off during a period of two or three weeks, followed by a period of minimum dosage. All too often the treatment ceases before the patient has been completely rid of the parasites, when prophylactic doses must continue if residence is retained in a malarial district.

Financing a malaria-mosquito campaign is quite naturally the chief difficulty. However, having aroused intelligent interest by means of newspaper publicity, lectures, demonstrations, etc., much less difficulty is experienced. Between $5000 and $6000 (not a large amount to be sure) has been expended in campaigns organized directly or indirectly by the writer specifically against malaria-bearing mosquitoes. This money has been collected by interested persons by subscription, donations in open meetings and by tag-days.

The cost of the campaigns has averaged from 40 cents a day per square mile of protection to 75 cents a day for the same protection, in other

words from about $750 to about $1400 per annum, with varying degrees of efficiency.

Our greatest need is financial assistance. The legislature of New Jersey, by an act approved April 20, 1906, appropriated a sum of money for purposes of general mosquito control, stating "provided that the aggregate sum appropriated for the purpose of this act shall not exceed three hundred and fifty thousand dollars."

A similar act in California, providing much less, would bring in return many times the original amount expended, through the stimulation of colonization alone in northern and central California. The readers of this article would be surprised to know how often the writer is requested on the part of prospective settlers to give information relative to the prevalence of malaria in certain parts of California and to state whether or not any effort is being made to control the same.

Several unsuccessful attempts have been made to pass legislative measures in this state. However, Tehama County has an exemplary ordinance directed against the Anopheles mosquito. A commendable feature about this ordinance is that it defines the term stagnant, viz., "The presence of the mosquito larva in said water shall be conclusive evidence that said water is stagnant," etc.

The several successful campaigns against malaria in California have shown how the attack can be made. We now need a larger, wider effort to drive the disease entirely outside the confines of the state, and this can be very largely accomplished in a relatively short time if systematic effort is put forth. As Californians we need not fear that this sort of publicity is poor advertising,—quite the contrary, any state will admit that it has mosquitoes and all will give highest praise to the state which frankly recognizes this defect and applies the means at hand to eliminate it. California has a decided natural advantage due to its largely semi-arid climate.

As a public health movement malaria control deserves the whole-hearted backing of the medical fraternity.

DRUG ANAPHYLAXIS: AN ILLUSTRATIVE CASE?*

By A. J. SCOTT, Jr., M. D., Los Angeles.

The literature of today contains many references and many articles on anaphylaxis. Dorland [1] defines it as: "The state of excessive susceptibility to the action of a toxin or a drug which sometimes follows infection or continued administration of the drug. Called also Theobald Smith phenomenon and hypersusceptibility."

Armond Deville [2]: "There exists a certain number of organic substances which introduced for the first time into the organism, in innocuous doses, have the property of producing in the organism, after a fixed period of incubation, anaphylaxia, that is, an extreme sensitiveness to minimum doses of the same substance which produce no trouble in an organism not so treated. This anaphylactic condition appears to be connected with the development in the organism of a body, or a special property which exists, amongst others, in the serum of the blood since by introduction of this serum into another individual of the same species, this person is immediately plunged into a state of anaphylaxia."

Almost all experimental work and clinical observations have had to do with sera and serum reactions. A search of the literature reveals a scarcity of any article or case reports covering drug anaphylaxis.

F. Silvestri [3] observed cases of anaphylactic poisoning from various drugs, among which morphine is mentioned. He considers idiosyncracy and true anaphylaxis one and the same thing, forming virulent and promptly acting poison out of proportion to the dosage.

The cause of death in true serum anaphylaxis is a stenosis of the pulmonary air passages. The period of time from the primary injections to the manifestations of symptoms of poisoning varies from six to twelve days after the second injection. Whether the same be true for drugs or not, is not known as we have no animal experiments to show.

Take the drug morphine, which is so often used in the treatment of spasmodic or bronchial asthma. The average lethal dose cannot be definitely determined, for what will be an ordinary dose for one individual, may be toxic for another.

Emerson [4] states: "In adults, not addicted to the drug, one to three grains will cause symptoms, often death. * * * Fatal results have occurred even after the subcutaneous injection of ¼ grain. People exhibit various degrees of susceptibility to the action of opium, so that it is impossible to say definitely what a fatal dose will be. Idiosyncracy plays a large role in modifying the usual effects of opium, and may be of importance in medico-legal investigation * * * Some diseases render the system very susceptible to its action."

Bronchial asthma per se, has a close relation to anaphylaxis, in its response in many persons to emanations from horses, its relation to hay-fever, etc., and is not considered here for the reason that it was not the cause of death, and the post-mortem findings showed nothing of particular value with reference to the cause of the asthmatic attacks. But the particular action of the drugs, the smallness of the lethal dose, the period of time over which it was given, the history of having been a morphine habitue in the past, leads us to consider this case as possibly one of drug anaphylaxis. Those who are frequently associated with morphine habitues tell of persons who, having been free from the drug for various periods of time, have often experienced marked toxic symptoms upon renewing the drug, even in very small doses, sometimes sudden death occurs.

In this connection, the following case is reported, hoping that it may be of slight value.

Unfortunately no serum tests were made, but the clinical symptoms lead us to the diagnosis, as well as the history of the case.

On Friday, May 22, 1914, at 8:40 A. M., was

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called to J. E. stating the trouble was spasmodic asthma. Getting there about 8:50 found a fairly healthy young woman with labored breathing and coughing in an attack of asthma. Tried to examine her heart but the rales in the chest overcame all sounds, except the first tone at the apex.

On questioning, she had been given doses of adrenalin hypodermically during the night by the husband, dosage ranging according to their statement from two to ten drops at a dose. Gave her fifteen drops of 1 to 1000 solution of adrenalin by dissolving of 3/200 grain tablet of adrenalin in 25 drops of water, at 9:00 A. M. After waiting 10 minutes, and getting no effect from this whatever, gave her a tablet containing 1/20 grain morphine nitrate, 1/50 grain nitro glycerine, 1/50 grain strychnia, together with ¼ grain tablet morphine sulphate plain, hypodermically. At 9:40 no relief, so gave another ¼ grain morphine with 1/150 of atropine, with fifteen drops of adrenalin solution that they had on hand. This made 11/20 of a grain of morphine that she had had in a half hour.

Stayed with the patient until a little after 10:00 o'clock. About 10:15 she had a good pulse, respirations were easy, pupils normal, was conscious and apparently in very good condition. Left four ¼ grain hypo tablets of morphine sulphate plain, with instructions to use one at a time guarded with 15 minins adrenalin not oftener than every two hours, but not to use except during a severe paroxysm and not to start before evening.

Past History: She had been in the habit in past years to take morphine for the relief of her attacks of asthma, but had, according to her statement, taken none for two years. During this interval she had used the adrenalin solution with a hypodermic upon the advice of some physician. Two years ago she had been given, so they said, four grains of morphine in broken doses, before relief was obtained from a severe paroxysm. She was in a hospital at the time and on account of symptoms of morphinism had been given appropriate and successful treatment at once. They said she had had no morphine up to the time that I had administered it on this morning.

At 4:45 P. M. the husband telephoned that the wife had been asleep for over an hour. Upon asking if it were a normal sleep, he responded that it was, apparently. He stated that at 2:00 P. M. he had given her one of the ¼ grain tablets that had been left and getting no result had repeated it at 2:30 upon her request. He said she vomited after the second dose and her bowels had moved with an enema. Asked him what the condition of her pupils was, and he replied, after examination, that they were pin-point, also that he was unable to rouse her by repeated shaking. Told him I would get there as soon as possible, but being delayed phoned him again and receiving the reply that she was in the same state, told him to make some strong black coffee and give to her if he could get her to swallow. Reached the house at 5:20, found her reclining in a chair, unconscious, pupils about one to two millimeters in diameter, slow, Cheyne-Stokes respiration, lips a peculiar brownish hue, face slightly flushed, pulse about 100—weak, easily compressed, but regular. One one-hundredth grain atropine was administered at once hypodermically, and an attempt made to wash the stomach, which was unsuccessful, on account of the tube being too soft.

The husband was informed that his wife was in a critical condition and that we might not be able to resuscitate her, phoned for an ambulance at 5:30 and got her into the receiving hospital by 5:45. She apparently died on the road to the hospital, although we had given the attendant some aromatic spirits of ammonia to hold to the nostrils on the trip.

At the hospital, artificial respiration by the Sylvester method and 1/50 grain of atropine administered. She gave one or two gasps while on the table, although we could get no heart tones at all.

Autopsy held by Dr. Wagner, autopsy surgeon, the following day, showed: Throat negative so far as any abnormality. Chest: Lungs emphysematous with some thin bloody fluid. Heart absolutely normal. Abdomen: Stomach slightly injected mucosa. Intestines: Liver, spleen, kidneys, negative. Right ovary cystic, size large hen's egg. Left ovary beginning cystic degeneration. Uterus small, normal. The skin had a mottled reddish hue and on the arms were numerous old and new hypo pricks.

Diagnosis, overdose of morphine administered accidentally. COMMENTS: This case presents some rather interesting questions; first was there any idiosyncracy for morphine on that particular date, or was the system so exhausted from the prolonged and labored efforts at breathing, that the morphine had a particularly toxic effect, or anaphylaxis.

With the history of having been a morphine habitue in the past and free from morphine for two years, could the dose of one grain of morphine at that particular time and in that particular individual have been more highly toxic than at any other time: again anaphylaxis.

She had all told 21/20 grains of morphine in a period of six hours as well as 1/150 grain of atropine.

From the foregoing, it is essential that a comparison be made between the manner of death from morphine and anaphylaxis. In anaphylaxis death, (serum anaphylaxis being considered, as we have no symptoms of drug anaphylaxis with death,) quoting from the experimental work of Auer and Lewis on guinea pigs, the respiratory movements cease before the heart stops beating, by several minutes. There is also a paralysis of the skelatal motor muscles, consciousness usually present to end. Autopsy findings in chest show lungs in a distended state, rather dry, and somewhat similar to emphysema. This latter condition according to Auer and Lewis[5]: "forms the anatomical basis for the explanation of immediate anaphylactic death, and that this asphyxia is produced by a stenosis of the pulmonary air passages." It is agreed by most observers that death is due to some disturbance in the medullary centers.

On the other hand, true acute morphine poisoning results according to Emerson[4], Butler[6] and others "from true respiratory failure, the asphyxia being closely accompanied by cessation of the heart's action." There is cyanosis, contracted pupils, drowsiness, deepening into coma from which the patient cannot be roused, relaxation of the muscular system and abolition of the reflexes.

We have undoubtedly a case of true morphine poisoning, but the history, and the present attack taken together, leads us to consider seriously the possibility of drug anaphylaxis.

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REPORT OF THREE YEARS' RECTAL WORK AT THE COUNTY HOSPITAL.*

By W. H. KIGER, M. D., Los Angeles.
Visiting Surgeon, Rectal Ward, Los Angeles County Hospital.

My object in writing this paper for your consideration is twofold; first, to invite your attention to the frequency of rectal and colonic diseases; and second, to compare the different methods of operating for said diseases. I have taken from my books and tabulated a list that you may see the frequency with which each disease occurs. All writers on this subject agree that hemorrhoids heads the list. Permit me to say in this connection that much confusion might arise here for the reason that the patient's word is often taken and he invariably calls any, and all, affections in the region of the anal canal or rectum, *piles,* when in truth his opinion is far from being correct. May I also suggest that the doctor in the case frequently falls into error either by taking the patient's word for it, or that he fails to make a thorough examination or perhaps never having given any special study to these diseases, is not prepared to make a positive diagnosis. No one will gainsay but that the diseased conditions found in the rectum and colon are of just as much importance as when disease is found in any other portion of the anatomy. Either one or the other, rectum or colon, is frequently the seat of enough pathologic change as to render life unbearable or endanger life. Let me cite in evidence: Cancer, tubercular ulceration, close strictures of the gut, destructive fistulae, dangerous hemorrhage, and may I add, pruritus and fissure, one the most tormenting, the other the most painful of all affections of the body. I do not include hemorrhoids although many appear to think that they embrace about the only disease found in this region that calls for surgery. And there be those that harken to the charlatan, and argue that ointments are quite sufficient for the cure of "piles." I submit my report which is as follows:

OPERATIONS.

Hemorrhoids	267
Fistulae	116
Abscesses	44
Strictures	21
Irritable ulcers and Fissures	24
Benign Tumors	10
Tubercular ulcers	19
Prolapse	8
Cancers	6
Pruritus Ani	6
Impacted Feces	2
Total	523

As my work at the clinic ward is limited to surgery no "treatment" cases are reported. I will not attempt to individualize these cases for to do so would make this paper too long, but will rather content myself with dealing with them as a whole and dwell more upon the methods of operating, looking to their cure and submitting comparisons. First, let me call your attention to the frequency with which these diseases occur, which I believe will be found about the same by all surgeons doing rectal work, yet I have heard it discussed, whether hemorrhoids or fistula should receive first place. In my records, hemorrhoids so outstrip fistula in the race of frequency that the latter could not be considered a good running mate, although it does come second in the list.

* Read before the Los Angeles County Medical Society.

HEMORRHOIDS.

It is not my intention, as has been intimated, to discuss the etiology of these diseases in this paper but only to deal with them in an operative way. For the relief of hemorrhoids many operations have been devised. The two most used are the ligature and the clamp and cautery. The elder Allingham up to the time of his death, a few years ago, and after doing thousands of operations pronounced the ligature "the best, safest and quickest done" of all operations for hemorrhoids. I have used both methods frequently and although many consider the ligature as obsolete, and nonsurgical, the reasons given, viz: "that it invites sepsis, and that it is the most painful" do not hold good in my work or in the opinion of others who do proctologic work. Allingham counts sepsis as *nil* after ligature operations, and Mathews after thirty-five years in this special line reports that he never saw sepsis result after an operation for hemorrhoids by ligature. (He refers to one death from tetanus in his book.) It stands very favorably with the clamp and cautery method, at least so in my work. You will notice in the list that I have done in the three years in the County Hospital two hundred and sixty-seven operations for hemorrhoids. I have not limited myself to any one of the different advised operations. Indeed there are quite a number suggested. Allingham ligated after making a deep cut at the sulcus or white line leaving the tumor hanging as an isthmus, cutting it off close to the ligature. Mathews did this operation for a number of years, then changed the method to simply cutting through the skin, thereby, he claims, avoiding all hemorrhage. Earle, with a special clamp catches the tumor at its base, cuts it off and sutures around the instrument. Van Buren transfixed the tumor by passing a large threaded needle through the center of the pile and tieing tightly on either side. Pennington excises the tumor, Gant does much of his work under local anesthesia. Almost all others confine themselves to the clamp and cautery. I prefer the plan suggested by Mathews with the addition of a subcutaneous stitch around the cut edge of the skin with the same ligature as suggested by Ball. I think it lessens the pain and shortens convalescence.

FISTULA IN ANO.

Permit me to say that "Fistula in Ano" though used by all authors, is a misnomer. Fistula in this region deals much more with the rectum and its tissues than with the anus. In the three years' service I have operated one hundred and seventeen times for anal or rectal fistulas. In a word, the operation consists in ferreting out each and all sinuses and dissecting them out. In doing this, very often much tissue must be sacrificed. This is the one disease that requires much cutting if a

cure is expected. Better by far to do too much than too little. I never fail to sever the sphincter muscle when necessary. It must not be forgotten too that its action during and following defication prevents the healing process. Being both a voluntary and involuntary muscle it can be in action at any time; no fear should be entertained that incontinence will follow save in the tubercular patient or where the muscle has been injured by traumatism. The patient is allowed to get out of bed and walk much sooner than it takes the wound to heal; this course aids, rather than prevents, the healing process.

ABSCESS.

Strange to say that during the three years I have opened but forty-four rectal abscesses. Recognizing that all fistulas begin with an abscess and that when these are opened in the early stage the fistula is often prevented, this small number can be accounted for by reason of the fact that the patient does not know of the importance of having the trouble attended early and, too, they are often advised by the physician to wait and allow it to "burst." I would rather open the supposed abscess and find only inflammatory tissue, than to allow a pus formation to go a single day without opening.

STRICTURE.

I have operated on twenty-one cases of stricture of the rectum in these three years. You will agree with me I am sure when I say that a stricture of the gut in any locality is a very serious condition. If they are within reach they should be removed by making a dissection of the gut or a posterior linear proctotomy with complete division of external parts. Some practice gradual or forcible dilatation. I have used all of these methods and prefer the first two mentioned. If for any reason it is thought not advisable to operate for the stricture per se then a colostomy should be done. I have had only three cases when I thought this necessary, two of the strictures being the result of malignant disease and the other of syphilitic infection.

IRRITABLE ULCER AND FISSURE

I have listed irritable ulcer, and fissure under the same heading, although they are not the same by any means. A fissure is simply a break or crack in the mucus membrane at the anal outlet. An irritable ulcer is just what the name implies: an ulcer irritated. The surgery required to cure a fissure is very simple; a cut through it and the edges trimmed will effect a cure. In many cases a full dilatation of the muscle is all that is required. An irritable ulcer requires much more than this—full dilatation of the muscle, a curettage of the ulcer, trimming of the edges and many applications afterward. An ulcer in the rectum should be looked upon with suspicion for tuberculosis is often the cause of this condition.

TUBERCULOUS ULCERATION.

And this leads me to consider ulcers that are of tuberculous origin, of these I have seen and treated surgically nineteen cases. If they required any surgery I never hesitated to use it, such as trimming off infected edges, cauterization of the ulcer, etc. One precaution should always be observed in dealing with these cases; namely, be careful in dilating the muscle. The wounds will heal if properly cared for. It would be a pity to leave these cases uncared for, under the mistaken idea that surgery would do no good.

PROLAPSE.

The rectum often prolapses either in the infant, middle, or old age, in size from a very small tumor to one of immense proportions. No treatment outside of surgery does any good for a pronounced case of prolapsus except in the infant when strapping the buttocks will effect a cure. The suggestion of Van Buren, to draw six lines down over the mucous surface of the rectum with the actual cautery has been proven inefficient by all operators. The two accepted operations for the trouble are amputation, and colopexy as devised by Mathews. The latter operation consists in opening the abdomen in the median line, drawing the gut out *taut* and suturing to the abdominal wall. I have done this operation in two cases with very satisfactory results. I have amputated the prolapsed gut several times with a favorable result.

BENIGN TUMOR.

Under the head of benign tumor I include polyps. All such I have removed by ligating at the base and cutting away the tumor if of any size.

PRURITUS ANI.

It is believed by many of our leading proctologists that this troublesome affection should be treated in a surgical way. Mathews does a careful dissection of the itching area made to include the lower inch of the rectum. Hanes removes only the lower inch and claims that this effects the cure. Ball makes a curved incision on each side of the affected area. The flaps are dissected up to the anal canal above the muco-cutaneous junction. And thus all the cutaneous nerves are severed. After bleeding is stopped the flaps are returned in place. The danger that I see in this operation is that after severing the nerve distribution in buttock you might have death of tissue result. In my service I have been content to remove the lower inch only. I believe with those who classify this disease as one requiring surgery, as all other treatment is generally futile, except in very mild cases.

CANCER.

It is a well recognized fact that the rectum is a favored seat for cancer and if seen in its earlier stages is often cured by surgery. Whole volumes could be written concerning the different operations that are proposed for its removal. Every one who has removed the complete rectum for a malignancy will confess I am sure that the operation is one of the major if not *the* major operation in surgery. I have operated six times for a malignant rectum, four are living, one died following the operation, one had a recurrence in the liver in three months. Dr. Cooke kindly operated at my clinic on one case of this kind. Percy has devised a procedure to be used in the advanced cases of cancer, which consists in the application of modified

heat by cautery. In some cases his results have been marvelous. He emphasizes that it is not the cancer that kills the patient, but the sepsis it causes. He believes that his heat application suspends this action.

SEX.

This report covers operations on males four hundred and five, females, one hundred and seventeen, showing a great preponderance of rectal diseases in the male.

ANESTHETICS USED.

Spinal	317
Ether	117
Gas	3
Local	86
Total	523

You will observe that I have used spinal anesthesia principally in my rectal work and I regard it as an ideal anesthetic in such work. I know that this method has been decried by many operators but I must believe that it was not given a fair trial in their hands. I have never lost a case that could be attributed to its use nor have I had any unpleasant experiences so I shall still continue to use it. As all of this work has been done in the wards of a public hospital it has been impossible to collect data as to results.

Discussion.

Dr. Whitman: For more than three years past, all cases of rectal pathology coming to the County Hospital, have been referred to Dr. Kiger. The list of cases presented by him here tonight is compiled from the hospital records of cases operated by him, and is therefore correct. The results of operations have been uniformly good. I have seen Dr. Kiger operate, and I am very favorably impressed with his technic, especially his modifications of the Mathews method, where he stitches the skin and mucosa. This seems to me to give a better result than any other procedure with which I am familiar. You have had the pleasure tonight of listening to an address by Prof. Joseph Mathews of Louisville, who is one of the most distinguished members of our fraternity. I am proud to say that I have known Dr. Mathews for more than a quarter of a century.

Dr. A. B. Cooke: The paper we have just heard read is a particularly admirable one because of its practical nature. I have had the pleasure of visiting Dr. Kiger's clinic a number of times at the County Hospital and I regard it one of the best rectal clinics if not the best of which I have any knowledge.

Many points in the paper would bear discussion did time permit. I shall refer to only one. Dr. Kiger seems to give the weight of his endorsement to the ligature operation for internal hemorrhoids. Performed as they generally are in Dr. Kiger's clinic under spinal anesthesia there is some show of reason for this preference. But as contrasted to the clamp and cautery operation there can be no doubt of the great superiority of the latter. The ligature operation has many defects which can be summed up in the statement that it is an unsurgical procedure. Whatever technic is employed when the base of the tumor is strangulated by ligation there is nothing for it to do but slough. This results in leaving a raw, open, ulcerating surface which invites sepsis. Again we all know that one of the most painful things that can happen in surgery is the compression of sensory nerve filaments with a ligature, thus inviting if not insuring post operative pain. On the contrary, the wound left by the clamp and cautery is aseptic from the beginning, repair is much more prompt, and if the technic is correct the post-operative discomfort is very much lessened. The above comments are made notwithstanding the presence of my very good friend Dr. Mathews. What he will say I know in advance for I have heard it many times. But I am sure it will prove interesting to the audience. I am very glad indeed Dr. Kiger read this paper tonight that the profession of the city may have some knowledge of the good work going on over at our splendid County Hospital.

J. M. Mathews (by invitation). The one thing that has interested me most in this most excellent report of Doctor Kiger's is the fact that he has so large a clinic on this special disease. I speak advisedly when I say that it is the largest and best clinic of its kind to be found anywhere in the United States. The County Hospital, under its splendid management, should be congratulated for providing such rare conditions for patients afflicted with this special class of diseases so much neglected by the general profession.

The next thing that attracted me was the anesthetic that he uses. I must confess that I have never used spinal anesthesia, because I feared it. I must have gotten my impressions from some adverse criticisms in the medical press. I can quite understand now that anything opposed to this method arose during its earlier use, when cocain was the agent used. I would have no further fear after hearing this report.

I am glad that the doctor has mentioned the use of the ligature in operating for hemorrhoids and commends it. Much has been written and talked in opposition to its use. My friend Dr. Cooke has just now in discussion of the paper given several reasons why he opposes its use. Like many who write and talk against it, I fear that the doctor started off in the treatment of hemorrhoids by using the clamp and cautery, which no doubt has served him well, and was prejudiced against the ligature, and has never given it a fair trial. I say this because, after using it for over thirty years, I can safely affirm that one and all of the reasons he gives for not using it are purely chimerical. In all my long experience I have never had a single case of sepsis follow, nor an abscess result. Nor have I ever had an ulcer supervene. The elder Allingham said to me once in St. Mark's Hospital that his experience was similar, after operating thousands of times for this trouble by the ligature. Indeed, he used no other method. So if real facts amount to anything, Doctor Cooke's objections go to naught.

I too regret that Doctor Kiger did not go into the etiology of these diseases, but I can quite understand that it was not in the limits of his paper. He is to be congratulated in presenting to this society so practical a paper.

AMERICAN MEDICAL ASSOCIATION

Meets

in San Francisco

June 22, 23, 24, 25, 1915

A CONSIDERATION OF THE RELATIVE MERITS OF THE ALBEE OPERATION AND THE HIBBS OPERATION.

By ETHAN H. SMITH, M. D., San Francisco.

The question of whether we shall do an Albee operation or a Hibbs operation in a given case of tuberculosis of the spine, is one about which much has been said and written. Having had experience with both operations in a number of cases, and also having seen the work of Dr. R. W. Lovett and Dr. Augustus Thorndike at the Children's Hospital in Boston, the writer would like to endorse the conclusions of these gentlemen, as it seemed to them to have worked out up to a year ago.

The Albee operation is not advisable in very young subjects, say under five years of age, as the long bones are so fetal in character that the transplant from the tibia will bend after having been placed in the spine and the kyphosis will increase. While in the Hibbs operation, the callus which is thrown out as a result of raising the periosteum from the laminæ and spinous processes and the folding down of the spinous processes is soft, yet it is so voluminous that it will support the spine very much better than is the case in the Albee operation.

Experience with both operations tends more and more to prove this to be the case. The older the patient, up to adult life, the more applicable is the Albee operation. It is doubtful if the Hibbs operation should be considered after the 15th year. The callus which is thrown out after a Hibbs operation in any patient near adult life is so slight in comparison with that in young children that it is not sufficient to support the spine for a number of weeks after it is done; it does not relieve the pain in cases where pain is a prominent symptom; and the disease tends to progress almost unhindered, this in spite of the fact that the patient may be placed on a stretcher frame or in some supporting apparatus, plaster of paris or otherwise. With the Albee operation, pain due to the disease, and not attributable to the necessary trauma of the operation, usually ceases within the first twenty-four hours after the operation is done and all symptoms are ameliorated. The splint will amalgamate with the spinous processes and laminæ, if properly applied, so as to give much greater support than can be obtained by the Hibbs operation.

The Albee operation offers another advantage over the Hibbs operation in cases where the disease has involved one side of the spine to a greater extent than the opposite side: that is, in those cases in which the disease begins laterally in the vertebral bodies rather than anteriorly. The transplanted splint can be placed on the side of the concavity of the deformity, so as to overcome the tendency to lateral distortion with less strain on the splint than if placed on the opposite side of the spinous processes. This is one of many little details that must always be taken into consideration in doing an Albee operation. A chisel, or osteotome, beveled on both sides and drawn down to a keen edge, and kept just as sharp as a carpenter's chisel, should be used. Great care should be taken in chiseling the spinous processes not to pound too hard with the mallet, as heavy pounding may very markedly disturb the patient's pulse and respiration and increase the tendency to surgical shock afterward. The chisel should have a keen enough edge to be driven down with slight tapping of the mallet, thus obviating any unnecessarily rough handling of the spine.

The patient must be carefully inspected to see whether or not there is lateral deviation of the spine and the splint placed on the side showing a lateral concavity. The spinous processes must not only be stripped down or denuded so as to thoroughly eliminate any possibility of interposition of periosteum or other soft matter, but the periosteum must be lifted away from the laminæ and the splint placed snugly in the angle between the laminæ and the spinous processes.

The sutures must be passed through the base of the spinous processes and not merely through the soft parts.

There is no advantage whatsoever in attempting to put in two splints in what has been termed a "double Albee" operation. It is a waste of time, and an unnecessary and harmful sacrifice of the spinous processes which may result in defeat of the whole operation. One well-shaped transplant sawed, not chiseled, from the tibia, thoroughly settled down into a seat properly prepared in the spine and securely sutured in place, is all that is necessary. The second splint on the opposite side cannot be properly sutured in place without jeopardizing the integrity of the spinous processes and disturbing the first splint applied, nor can they both be simultaneously applied in a satisfactory manner.

In the lumbar region it is difficult to split the spinous processes as the tip is frequently large and bulbous in shape with a narrow neck which might break if serious attempt were made to split it. If it is thoroughly denuded of its periosteum the purpose is accomplished.

The splint should be shaped with a saw and all scoring, so far as possible, avoided, as it weakens the splint. By a little maneuvering, a large graft can be sawed out from the upper part of the anterior face of the tibia and so shaped as to fit accurately into the deformed spine. Chiseling out splints needlessly cracks the bone, batters the splint and the tibia, produces unnecessary and harmful trauma, and is a most slovenly way of attempting to do the operation. All bone transplants for use in the spine or long bones should be sawed in any case. By using a metal guide to get an outline of the splint to be fitted, it can be marked out on the surface of the tibia and sawed to fit accurately. It comes out easily without serious damage to the tibia, saves time, and is a neat and workmanlike way of doing the operation.

Dr. Albee is certainly right in not using plaster of paris jackets or other supports in the operation advised by him. These patients do better when

permitted to go without other support than that afforded by the properly applied graft in the spine. They should be placed face downward on pillows or a properly prepared bed until the wound over the spine is sufficiently sound to have all sutures removed.

After the Hibbs operation support to the spine is necessary, or it will be so disturbed as to interfere seriously with the result.

Great care must be exercised in handling these patients, and in removing them from the operating room to the bed, not to thoroughly wreck all the work done at operation.

Patients that are very weak and anemic should under no circumstances be operated upon until an effort has been made to build them up so as to endure both the anesthetic and the operation. The application of the principles of Crile's anoci association should be always observed.

The patient with abscesses, from which pus can contaminate the wound and gain access to the transplanted bone in the spine, should seldom be operated upon until the sinuses have healed and the pus can be excluded.

Cases where a tubercular deposit is connected with the spinous processes, where pus may not have formed, but where tubercular tissue might break down and cause pus, form a problem which must occasionally be dealt with. If the tubercular deposit is dissected out first and the wound permitted to heal before attempting an Albee operation, it may heal only temporarily and we may have a larger tubercular abscess to deal with than if it had not been touched. If we dissect out a mass of tubercular tissue and place in a transplant, we may get a union of the bone to the spine, and then have half of the transplant destroyed later on by tubercular disease. A tubercular sac over a spinous process, especially in cases which have been long on a stretcher frame or have been roughly handled by osteopathic therapy, is not an unknown experience; it affords a grave problem in considering an Albee or a Hibbs operation.

Where there is any liability of the end of the bone transplant becoming loose before union takes place between the transplant and the spinous process, a silver wire suture is an excellent thing. The suggestion of silver wire is not original with the writer.

The earlier tuberculosis of the spine is discovered and operated upon by one or other of the methods above mentioned, the more ideal will be the results. All physicians, no matter what their line of practice may be, should use their best endeavors to have parents, or those having children in charge, take the children occasionally to the family physician. The child should be stripped and its body carefully scrutinized for any possible disease or deformity. This is quite as necessary as taking a child to the dentist to have the teeth inspected and make sure there is no source of disease lurking in the mouth. Parents should not be taught to attempt to diagnose conditions for themselves, but they should be taught to take their children regularly and frequently to have a thorough examination. The proneness of many practitioners to ask a few questions and write a prescription, without stripping a patient even when the patient comes complaining of symptoms that ought to arouse suspicion of disease of the bones or joints, accounts for many of the diognoses ticketed "rheumatism." Rheumatism is getting to be almost as disgraceful a cloak for ignorance as its predecessor "scrofula."

Cases of turberculosis of the cervical spine should not be operated upon by either the Hibbs or the Albee method. Infants can be better treated by the wire cuirass or a properly applied plaster of paris cradle. Older children thrive very much better and get well very quickly and very successfully by the proper application of a plaster of paris jacket and jury mast as used by the late Lewis A. Sayre. These children can play about in the open air so happily and so comfortably with a proper jacket and jury mast and get well so quickly as compared to cases where the disease is lower down in the spine, that there is no necessity to disturb them by an operation which, because of the anatomical peculiarities of the vertebræ and the possibility of injuring the very soft structures, is likely to fail or worse.

Of course, an operation might be advisable in a case in the lower cervical region which laps over into the dorsal region. But in purely cervical cases, or in high cervical cases, an operation should not be attempted.

I wish to emphasize that I have said a *proper* plaster of paris jacket. Plaster of paris bandages wound about the patient's body in an indifferent manner are not a *proper* jacket.

We would here like to mention the colitis that frequently accompanies tubercular disease of the spine and hips. Frequently after an Albee or a Hibbs operation more pain is complained of from cramping of the bowels than from the operation. Much stringy mucus will be passed and until the bowel is relieved of this the patient will be very uncomfortable. An emulsion of kerosene 1 oz., olive oil 6 oz., allowed to flow gently into the bowel with low rectal tube, seems more efficient than anything else in clearing up the colitis as well as relieving the pain. The quantity given above is for an adult.

A WATER-BORNE TYPHOID FEVER EPIDEMIC.*

By WILBUR A. SAWYER, M. D., Director of the Hygienic Laboratory of the California State Board of Health.

The city of Healdsburg in Sonoma County, California, was almost entirely free from typhoid fever for a number of years prior to the summer of 1914. Between July 15 and September 22 of that year the city was visited by an epidemic of typhoid fever consisting of ninety reported cases and seven deaths.

Eighty of the persons affected resided in Healdsburg, and eight on near-by farms. One lived in Oakland, and one in Petaluma. All received their infection in Healdsburg. How many travelers

* Read before the Alameda County Medical Association, April 20, 1915.

contracted the disease and became sick in distant cities is a matter of conjecture.

As there were seven deaths among the ninety cases recognized as a part of this epidemic, the mortality was 7.8%. One of the deaths occurred on a farm near Healdsburg. The Oakland patient died in a San Francisco hospital. The five other deaths occurred among the eighty residing in Healdsburg.

Healdsburg has an estimated population of 2100 persons. Excluding from consideration the incomplete reports of cases outside the city, we have the following statistics for the eighty cases (including five deaths) among residents of the city.

The cases were 3.8% of the population, or in the ratio of 3810 per 100,000 people. The deaths were 0.24% of the population, or 238 per 100,000 people. The case mortality was 6.3%.

The distribution of cases among patients of various ages departs but little from the usual arrangement as determined by the United States Public Health Service in a recent study of the available statistics.[1] The cases of the Healdsburg epidemic have been arranged according to the ages of the patients in Table I.

Table I—Ages of the Typhoid Fever Patients by Decades.

Ages in Years.	Numbers of Patients.
3 to 10	17
11 to 20	19
21 to 30	22
31 to 40	18
41 to 50	8
51 to 60	5
61 to 66	1
Total 3 to 66	90

In 64 of the 90 cases of typhoid fever the diagnosis was confirmed by a positive microscopic agglutination test. In 17 cases the agglutination test was negative, but most of the samples of blood failing to give a positive reaction were taken early in the disease. In only three cases were negative results obtained from blood drawn over nine days after the onset. All but two of the Widal tests were made in the State Hygienic Laboratory. In nine cases samples of blood were not submitted for examination. Sixteen additional cases were reported but were shown by investigation or later developments to be probably not typhoid fever.

The severity of the cases, as in most typhoid fever epidemics, varied within wide limits. One patient in whom the diagnosis was determined by a positive Widal reaction was in bed only four days. As a prolonged and intensive investigation of this epidemic was not possible, a number of the lighter cases probably escaped attention. There were many severe cases, and among the complications reported were relapses, bronchitis, pneumonia, convulsions, hemorrhages from the bowels, and perforation of the intestines.

The Ivestigation.

In response to a request from Dr. J. W. Seawell, Health Officer of Healdsburg, the California State Board of Health instructed me on August 1 to go to Healdsburg and co-operate with the authorities there in finding out the source of the outbreak of typhoid fever. From August 2 to 6 I made a field study of the epidemic, gathering data from physicians and patients, studying the water supply, investigating suspected sources of pollution of the Russian River as far north as Cloverdale, and advising the city authorities regarding emergency measures of control. In this work I was greatly assisted by the vigorous co-operation of Dr. J. W. Seawell, Health Officer; Mr. C. R. Nelson, Superintendent of the Municipal Water and Electric Light Plants; Mayor A. F. Stevens; and the physicians of Healdsburg.

The source of infection was found to be the city water supply. The city water had been used by all whose cases were investigated, including those persons who resided in the country. The milk supply, on the other hand, came from many sources, including several dairies. Some of the patients were supplied from neighborhood cows. Others used canned milk, and one used only goat's milk. There were no vegetable or food supplies nor eating places common to the majority of the patients. The case against the city water was further strengthened by the fact that a sample of the water had been sent by a city official to the State Hygienic Laboratory on May 5, 1914, and colon bacilli had been isolated from amounts of the water as small as one cubic centimeter. A moderate pollution with intestinal bacteria was, therefore, demonstrable at least two months before the epidemic began. If the State Board of Health had had in its employ a sanitary engineer to make the field investigation necessary to determine the full significance of the laboratory findings, he could then have demonstrated to the local officials the need for immediate treatment of the water supply, and the epidemic might have been prevented and seven lives saved.

The course of the epidemic is shown in the accompanying chart. The number of cases beginning on each day is shown by the height of the shaded area. Light shading indicates that the patient recovered, and dark shading denotes a fatal termination. The characteristics of a water-borne typhoid fever epidemic, as contrasted with a milk-borne or food-borne epidemic, are shown by the gradual beginning and prolonged course. To emphasize this contrast, this water-borne epidemic is compared in the chart with the recent food-borne typhoid fever outbreak in Hanford, California.[2] The former began gradually and was prolonged, because the infectious material was supplied through a long period of time, while the Hanford epidemic began suddenly and was brief, since it was due to infection from a single dish of food. In the former, a very small proportion, probably about five per cent., of the people who repeatedly drank the moderately polluted water came down with typhoid fever, while in the latter 57 per cent. of those who ate the highly infected food developed the disease. In epidemics due to a sudden, severe, and brief infection of a drinking water supply the outbreak may be explosive, like a typical food-borne epidemic, but the Healdsburg outbreak represents the more usual type of water-borne epidemic.

Some of the late cases in the Healdsburg epidemic were probably infected from the earlier cases

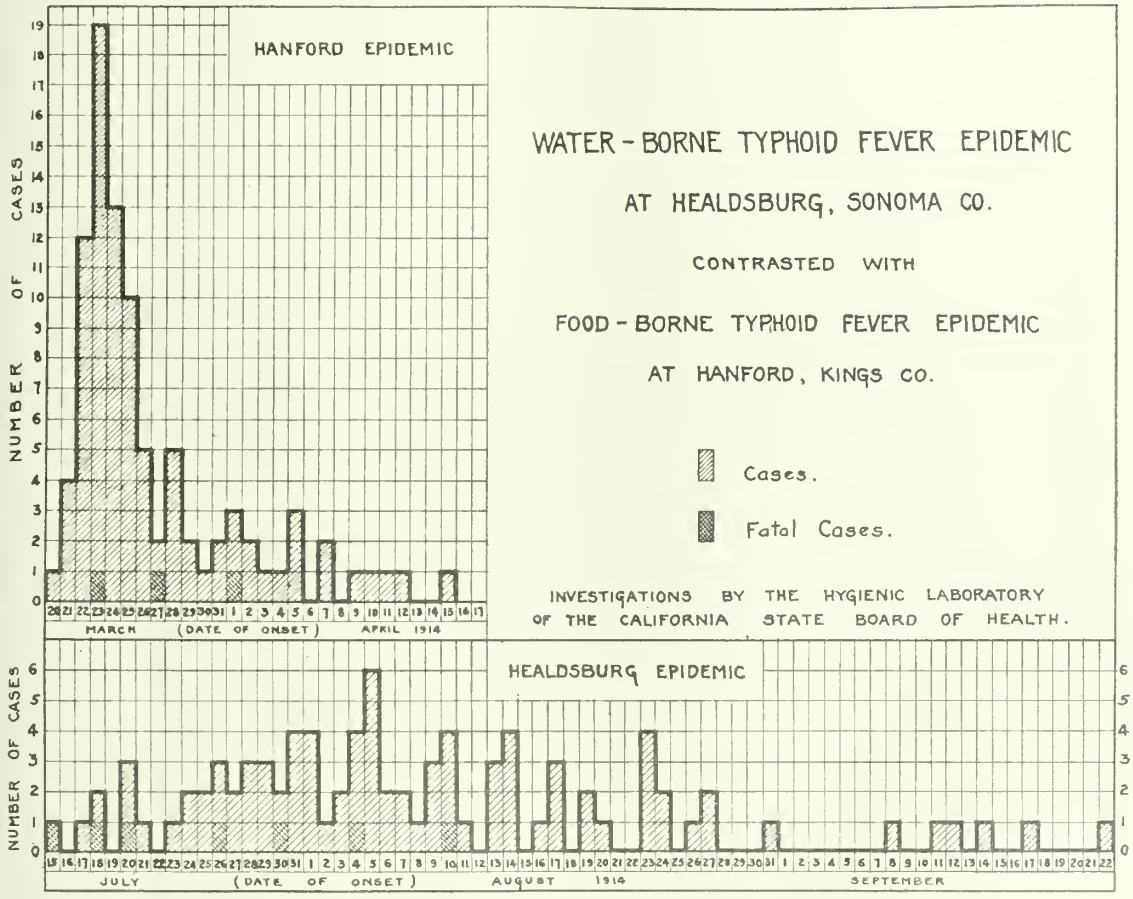
instead of directly from the city water. This would account for most of the cases in the small group at the end of the epidemic.

About the middle of July, when the epidemic was beginning, there were many cases of diarrhea among the people of Healdsburg, according to the reports of several of the physicians. It is not uncommon for cases of diarrhea to accompany or precede a water-borne epidemic of typhoid fever. In the water-borne typhoid epidemic at Rockford, Illinois, a city of 50,000 people, about 10,000 cases of enteritis occurred between January 16 and 20, 1912, and this outbreak was followed by 199 cases of typhoid fever having their onsets between January 23 and February 29.[3] Many Rockford people had both diseases.

The parts of town which received the least water through the supposedly infected pipes had their full share of cases. Moreover, at the time of the field investigation the daily number of new cases was increasing, although over three weeks had elapsed since the last pipe was laid. The epidemic was evidently not due to sewage accidentally admitted to the new pipes.

The Water Supply.

The Healdsburg water supply is pumped from five wells situated a short distance above the city in the bed of the Russian River. The wells are in that portion of the wide river bed which is submerged only during high water. Three of the wells, 1, 2, and 3, were bored to depths of 54, 34



It was suspected by some of the physicians that the diarrhea and the earlier cases of typhoid fever in the Healdsburg epidemic were due to the accidental inclusion of sewage in some new water mains. Some 1500 feet of new cast-iron pipe were laid in certain streets of Healdsburg, mostly in the business district, between June 23 and July 10. At one point a disconnected house-drain was said to have been seen discharging into a ditch which had been dug to receive the pipes. The contractor who laid the pipes denied the possibility of the inclusion of sewage. No cases of typhoid fever antedating the epidemic had come to the attention of the physicians of Healdsburg, and the laborers who dug the ditches and laid the pipes were all local men who were apparently well.

and 36 feet respectively. They were 20 inches in diameter and had been sealed at the top with cement to prevent the entrance of river water during freshets. Well No. 4, the one nearest the river, is an old dug well with a brick curb, and is ten feet in diameter and between 25 and 30 feet deep. A wooden cover bolted in place was intended to prevent the entrance of river water. This well is 42 yards (measured by pacing) from the edge of the water in the river at the summer level. Well No. 5 is a large dug well situated near well No. 4 and almost as near to the river. This well is 12 feet in diameter and 40 feet deep, and is protected by a wooden cover. All five of the wells were sunk into the gravel and sand of

the river bed without encountering any impervious strata.

The pipes from the five wells are all connected and it is impossible to tell how much water comes from each. From the pumping station the water goes to two reservoirs on a hill 122 feet higher than Healdsburg. Their combined capacity is said to be 500,000 gallons. The wells are reported to furnish between 500,000 and 600,000 gallons a day.

On August 3rd and 4th samples were taken at the surface of the water in each of the two dug wells, at the surface of the water in each reservoir, from the pipe carrying the mixed water of the five wells from the pumping station, from a faucet in the center of the city, and also from the Russian River opposite the wells. These samples were packed in ice and sent to the State Hygienic Laboratory for bacteriological examination.

At the laboratory it was found that the total number of bacteria in the samples from the two dug wells and from the pipe carrying the mixed water from the five wells was approximately half the number found in the samples from the river opposite the wells. The bacterial count of the water in the reservoirs exceeded that of the river water, and the bacteria in the water collected in the city were five times as numerous as those in the river.

These variations were due largely to water bacteria and were not so important to the investigation as were estimates of the numbers of intestinal bacteria, represented by the colon bacillus. In the river water colon bacilli were isolated from amounts of the water as small as one cubic centimeter, but not from 0.1 c.c. In well No. 4 they were found in 3.0 c.c. and not in 1.0 c.c. In well No. 5 they were not found in 3.0 c.c., although bacteria producing gas in glocose medium were demonstrated in 1.0 c.c. of the water. In the sample from the mixed water of all the wells colon bacilli were found in 3.0 c.c. but not in 1.0 c.c., and in each reservoir they were found in 5.0 c.c. but not in 3.0 c.c. In the sample from a faucet in the city, taken August 4th, colon bacilli were isolated from 1.0 c.c. and not from 0.1 c.c., a result the same as that for the sample in the Russian River and for the sample previously taken from the distributing system on May 5, 1914. The samples taken where the water was kept agitated, as in the river and in the pipes above the pumping station and in Healdsburg, as a rule showed a number of colon bacilli which was greater than where the water was quiet and undergoing sedimentation, as at the surfaces of the reservoirs and of the dug wells when the pumps were not running. When the pumps are in operation, a large part of the water enters the distributing system without passing through the reservoirs, and there is, therefore, little purification by sedimentation between the wells and the consumer.

In brief, the laboratory examinations showed that the water in the river was polluted with sewage and was not appreciably purified by passing through at least 42 yards of gravel and the city water system. The pollution in the river was about equal to that in the distributing system of the city. In each instance colon bacilli were demonstrated in 1.0 c.c. of the water but not in 0.1 c.c. The same grade of pollution had been demonstrated in the water previous to the appearance of typhoid fever, i. e., on May 5, 1914.

In order to complete the demonstration that the city water came from the Russian River, samples were taken from a faucet in the city and from the river and sent for chemical analysis to Professor M. E. Jaffa, Director of the State Food and Drug Laboratory. The reports of the analyses were almost identical, and Professor Jaffa stated in the letter with his report, "It would appear from the enclosed data that these waters are practically from the same source."

The Pollution of the River.

Many towns and the city of Ukiah are situated on the Russian River above Healdsburg, and some sewage pollution, coming from many sources, would be expected. The principal communities as far up the river as Cloverdale were visited and their sewage systems investigated, without discovering evidence bearing directly on the epidemic. The banks of the river in the vicinity of Healdsburg were carefully studied. About a mile above the city wells a sewer from a summer resort was found discharging fecal matter into a part of the river freely used for boating and swimming. The outlet was concealed by a dense growth of willows and was discovered only by entering the thicket in a boat. There had been no case of typhoid fever at the building from which the sewage came, but a typhoid convalescent or a chronic typhoid carrier may have been among the summer guests or servants. Some connection between the epidemic and the summer guests is probable, because the height of the season for the summer resorts was early in July, just before the epidemic began. The resort whose untreated sewage was found flowing into the river had only six guests at the time of the investigation, but had had over a hundred early in July.

A grave responsibility rests with the physician who sends a convalescent from typhoid fever to a summer resort without first ascertaining whether the sewage from the resort is properly disposed of, or at least warning the local health officer so that he can investigate.

At the time of greatest population in the camps and taverns along the river it is probable that the sewage pollution was greater than at the time of the investigation. A number of cottages have cesspools in the bed of the river where the water can quickly drain through the loose sand and gravel and pollute the stream.

So long as the Russian River is used extensively for boating and swimming, the pollution of the river by the entrance of raw sewage, the untreated effluent from septic tanks, and the seepage from cesspools situated in the river bed should be prohibited. Otherwise typhoid fever and other waterborne diseases must be expected.

Sewage Disposal.

The sewage of a city in which typhoid fever is prevalent is a source of danger. The Healdsburg sewage passes through a septic tank and is then

conveyed to Dry Creek, which empties into the Russian River several miles below Healdsburg. Inspection of the creek showed a condition typical of many of our California water-courses in summer. There was a wide gravelly creek-bed through which flowed a small stream, sometimes rippling over the stones, often concealed under the gravel for twenty yards or more, and occasionally standing in shallow pools. A sample of water was taken from a pool 197 yards below the sewer outlet. The water had flowed through three pools for a total of 150 yards and through two stretches of gravel for 47 yards. Colon bacilli were isolated from 0.001 c.c. of the water, which was not tested in smaller amounts. Such a test demonstrates only the facts, well known to sanitary engineers, that the septic tank cannot be depended upon to remove colon bacilli from sewage, and that the same can be said regarding rapid percolation through loose gravel. Investigations of septic tanks under favorable conditions have shown that the content of intestinal bacteria, as indicated by the number of colon bacilli, is not greatly reduced when the sewage passes through a septic tank.[4] Likewise, typhoid bacilli and many other pathogenic organisms can survive the septic tank, as the conditions are not sufficiently unfavorable to bring about their destruction. The function of the septic tank, whether it be of the Cameron type, of the Imhoff type, or of any other variety, is to reduce the amount of suspended solids by sedimentation and putrefaction of the sediment under anaerobic conditions. The effluent from the tank is about as dangerous as the same sewage without treatment, but owing to the decrease in putrescible solids, it becomes less of a nuisance. The effluent should undergo further treatment if it is to enter a stream which is used, unpurified, for drinking purposes.

The flowing of polluted streams through the gravel of their beds, under the summer conditions exemplified in Dry Creek, does not purify the water, and the drinking of water from the pools or "springs," as they are sometimes called, is dangerous. It is obvious that water running rapidly through gravel, either from a river to shallow wells or in the bed of a stream, does not allow a sufficient time factor to insure adequate filtration. Both the rapidity of flow and the coarseness of the material are such that sufficient purification by filtration is not effected.

The epidemic of 350 cases of typhoid fever at Centralia, Washington, in December, 1913, and January, 1914, was caused, like the Healdsburg epidemic, by taking water from wells sunk into the gravel at the edge of a polluted river.[5] The water had to pass through at least twenty feet of gravel. The percentage of the population involved (3.5%) and the case mortality (6.5%) were almost the same as the corresponding figures for the Healdsburg epidemic.

Control of the Epidemic.

Prior to the investigation, Dr. Seawell, City Health Officer of Healdsburg, suspected the city water supply as the source of the infection and instructed the people, through a local newspaper, to boil all drinking water, to protect food from flies, and to avoid the eating of raw vegetables. The public was slow to heed this advice, and one of the principal hotels continued to serve raw city water until specially warned.

When the source of infection had been determined, recommendation was made to the city authorities that the city water be treated with hypochlorite as an emergency measure. An extemporized plant for introducing hypochlorite at the pumping station was set up under the direction of Professor H. S. Griswold of the University of California and was operated by local men, beginning on August 7th. Six days after the treatment began, examination showed that colon bacilli could still be demonstrated in 1.0 c.c. of the water, although the total bacterial count had fallen from 600 to 20 per c.c. The amount of hypochlorite was then increased. Twenty days after the treatment began the local authorities sent another sample, which showed that the water was entirely safe. The bacterial count was 1 per c.c. and colon bacilli were absent in 10 c.c.

The new cases continued to be reported in considerable number for twenty days after the first application of the hypochlorite treatment, but after that there were only scattered cases, probably secondary to earlier cases.

In order to reduce the number of new infections from the city water and from the earlier cases, the physicians administered typhoid vaccine to many persons. The State Hygienic Laboratory issued to Healdsburg physicians, between July 28 and September 4, vaccine for immunizing 642 people, and most of it was undoubtedly administered. The vaccine used was the sensitized typhoid vaccine manufactured in accordance with the method of Gay and Claypole and issued free to physicians of California. The vaccine was given in three doses at intervals of two or three days, thus permitting the complete treatment to be administered in five days instead of in twenty-one days, as is required by the usual methods. Two persons developed typhoid fever between the first and last dose. Only one suspected case of typhoid fever was reported among those for whom vaccination was completed. A man who received his three doses of vaccine on August 5, 7 and 12, became sick on December 13, nearly three months after the last case of the epidemic, complaining of headache and backache and swelling of the eyelids. He had a moderate fever which had fallen to normal on December 29. A diagnosis of abortive typhoid fever was made by the attending physician. A positive Widal reaction was obtained, but it may have been entirely due to the vaccination. Unfortunately the case came under the observation of his physician too late for a blood culture to be of value. Among the unvaccinated there were 41 cases subsequent to August 6, a date sufficiently late to permit the earliest patients to have received three doses of vaccine.

Summary and Conclusions.

1. The Healdsburg epidemic of 90 cases, including seven deaths, was caused by polluted water which passed from the Russian River through at

least 42 yards of gravel to the wells of the city water system.

2. Rapid straining through coarse gravel and sand, either naturally through the beds of our dry creeks, or from a contaminated stream to wells, cannot be depended upon adequately to purify polluted water.

3. Septic tanks do not free sewage from typhoid bacilli and other pathogenic organisms, and their untreated effluents may seriously contaminate a stream.

4. As long as the Russian River is used extensively for boating and swimming, it should be protected from the entrance of raw sewage, the untreated effluent of septic tanks, and the seepage from cesspools situated in the river bed.

5. Inasmuch as every typhoid fever epidemic increases the amount of the disease in distant parts of the state and in future generations, and since the question of the water supply and sewage disposal of each community necessarily involves more than the one community, it is the duty of the state to examine all public water supplies and sewage disposal systems at frequent intervals and to prevent the use for drinking purposes of dangerously polluted water. Sanitary engineers in the state's employ are needed for carrying on this work. They are needed, also, to look after engineering aspects of the investigation of water-borne epidemics like the one in Healdsburg, and to aid in emergency measures for their control.

1 Public Health Reports, U. S. Public Health Service, Feb. 19, 1915, XXX, No. 8, 534-536.
2 Sawyer, W. A.: Ninety-three Persons Infected by a Typhoid Carrier at a Public Dinner. Jour. Am. Med. Assoc., Oct. 31, 1914, LXIII, 1537-1542.
3 Jordan, Edwin O., and Irons, Ernest E.: The Rockford (Ill.) Typhoid Epidemic. Jour. of Infectious Diseases, July, 1912, Vol. XI, No. 1, 21-43.
4 Kinnicutt, L. P., Winslow, C.-E. A., and Pratt, R. W.: Sewage Disposal, first edition, 1910, pp. 378-379.
Fuller, George W.: Sewage Disposal, 1912, pp. 472-474.
5 Kelley, E. R., and Macomber, S.: Typhoid Fever Epidemic—Centralia, Washington. American Journal of Public Health, November, 1914, Vol. IV, No. 11, pp. 1035-1045.

SCHOOL HYGIENE CONGRESS.

One of the most important associations to hold its meetings in San Francisco during the Medical Period is the American School Hygiene Congress on the 25th and 26th of June. For the past seven years this Association has stood for the conservation of childhood, especially in the schools. Problems relating to the open air school, the hygiene of the rural school, the organization of health work in cities, and state organizations of child welfare and hygiene teaching will be discussed by authorities from various sections throughout the country. Everyone interested, and every physician should be interested in child welfare, will find an opportunity during these meetings to get in touch with the most advanced opinions along all lines of child welfare work and anyone contemplating being in San Francisco for the American Medical Association meetings should not fail to adjust his time to attend these two days of meetings.

When one stops to consider how little is being done in the way of open air schools in our larger cities in California, how poor the hygiene is in our rural schools, that city organization of child welfare work practically does not exist, except in one or two centers where the beginnings have just been made and that there is no state organization of child welfare in California, one realizes the need of such meetings as the coming American School Hygiene Association meetings. It seems to the writer that there is hardly any subject of more importance to the medical profession of California which will stimulate the development of child welfare work than will be offered during these meetings. California has a few open air schools but we should have many more as our climate lends itself to a development of this type of school. Not half of our public school children have adequate medical supervision and many of the defects which handicap a child's later success in life as well as diminish its capacity to learn, appear and develop unnoticed during its school life. We physicians need to become interested in our public school system, to see the lack of health work being done and that each municipality has adequate machinery for carrying out medical supervision of schools.

William Palmer Lucas,
Secretary-Treasurer, Local Committee of Organization.

REQUEST FOR INFORMATION REGARDING TYPHOID VACCINE.

All available statistics regarding the benefits and limitations of the prophylactic use of typhoid vaccine in the civil population of California are being collected by the Hygienic Laboratory of the California State Board of Health. Physicians are earnestly requested to write a letter containing answers to the following questions and to mail it at once to Dr. W. A. Sawyer, Director of the State Hygienic Laboratory, Berkeley, California:

1. How many persons did you vaccinate against typhoid fever in California before April 1, 1915? Please state the kind (sensitized or ordinary) and the manufacturer of each typhoid vaccine used and the number of persons vaccinated with each.

2. To what extent were the vaccinated persons exposed afterwards to typhoid fever?

3. About how many cases of typhoid fever were there in your community in 1914?

4. Do you think that vaccination has appreciably diminished typhoid fever in your community?

5. In how many of your cases would you consider the reaction after typhoid vaccination (local soreness, malaise, fever) to be absent? Slight? Severe? Severe enough to warrant staying in bed at least half a day? (Please indicate separately the results with each different kind or make of vaccine.)

6. If any cases of typhoid fever have occurred among persons whom you had previously vaccinated against typhoid fever, or in patients who had been vaccinated by other physicians, please supply the following data:

Initials or name of patient.
Physician who administered vaccine.
Kind of vaccine and manufacturer.
Number of doses and dates of each.
Date of first symptoms of typhoid fever.

Basis of diagnosis: symptoms, Widal test, blood culture.

Duration, severity, and final result of the disease.

7. If you have heard of any case of typhoid fever in a vaccinated person, outside your practice, please give the name and address of the physician or patient so that particulars can be obtained.

CASE REPORT.

Fracture of the Left Clavicle by Muscular Action * (Without Blow or Fall).

By P. CAMPICHE, M. D., San Francisco.

M. T. of San Francisco, 13 years old, has never been sick and has always been a very strong boy. On December 20th, 1914, he was pumping air into the tire of his bicycle in the following manner: he was kneeling on the ground, pressing with his right hand on the base of the pump so as to steady it; with his left arm, which was elevated and abducted, he was just starting to bring the handle of the piston down when he felt a sharp pain in his left shoulder. His aunt, who saw him at the time, said that he turned quite pale. However, he did not complain any more about it and did not go to see a doctor.

At the end of January (about five weeks later), his mother brought the boy to me with what she thought might be a "growth" in the shoulder. The lump now felt in the middle of the clavicle has all the characteristics of a healthy callus. The X-ray plate confirms this view, and shows a transverse subperiosteal fracture of the clavicle, with large callus.

Dr. E. Rixford, discussing the case, accepted the diagnosis of fracture by muscular action; he agreed that there is no reason to think of a pathological fracture here as solid union has taken place and the callus is normal in every respect.

AN ACCIDENT WITH NEO-SALVARSAN.**

By A. DAVIDSON, M. D., Los Angeles.

X. Y. A stout, vigorous man, 27 years of age, weighing about 180 lbs., came to my office on the recommendation of his medical attendant, for an injection of neo-salvarsan. Six weeks before he had acquired a chancre and now showed a mild leutic rash of about one week's duration; no headache, fever or other disturbances. He had been taking mercury for about two weeks.

At 12 M. I injected dose iv. (0.6 gr.) neo-salvarsan, using 10 cc. of water in the prescribed manner. Before the needle was withdrawn, a spasm of pain was complained of "in the pit of the stomach," as he expressed it. He tossed in agony, and began retching of mucus. Perspiration rolled off his forehead, the skin of the arms showed extreme "goose flesh," his pulse became small and thready, began to intermit, and in five minutes he was pulseless, cyanosed with clammy skin, all the while conscious and said the pain was now in his heart and agonizing, air hunger was marked.

Fifteen minims adrenalin brought the pulse up so that intermittent beats could be felt, but in a short time he became pulseless again. A second dose was administered and repeated, as it seemed to be required in fifteen minutes again. At 1 p. m. the pulse was palpable but very irregular, he was still markedly cyanosed, lips and eyelids edematous.

I had him removed to the Clara Barton Hospital. When put to bed he vomited freely of some undigested food, and said he felt better; pulse 106 feeble but palpable. Drop enema salt solution given.

At 2:10 pulse 120—very weak.

At 2:30 pulse 126—very weak and intermittent, bowels moved.

At 3:00 pulse 120.

At 4:30 pulse 114—temperature 98°, feeling better.

At 6:00 pulse 95.

At 8:00 pulse 78.

Next day pulse was 66, temperature 98°. Had a light breakfast and except for some weakness which persisted for a few days, he felt quite well.

I am moved to report this case for two reasons: first, to warn you of the possibility of such an accident following the use of the hypodermic method, and secondly, to emphasize the value of adrenalin as the best and probably only means of saving life in these unfortunate cases. Use and repeat the adrenalin as often as the failure of the pulse would indicate. In this case I gave 60 M. of the 1-M. 1000 Sol. in the first hour, and response to its action showed immediately in the return of the pulse.

All of our medical journals have commented on and freely discussed the sickness and occasional fatalities that have followed the use of salvarsan. These are probably wholly due to arsenical poisoning, but of such accidents as I here relate, I have only found indefinite reference in European literature.

The instantaneous collapse that followed the injection, bears out the assertion made by a French observer, who affirmed that salvarsan contained some product that caused marked vaso dilation, and that many of the unfortunate after results were due to this property.

When the patient in question vomited after reaching the hospital, the remains of food expelled had a markedly spirituous odor. The presence of alcohol under such circumstances is an added danger, and may have been the cause of the symptoms displayed, as it too has a vaso dilator action, and may have accentuated that quality in the salvarsan.

* Presented before the Surgical Section, San Francisco County Medical Society, February 16, 1915.

** Read before the Los Angeles Medical Society, January 7, 1915.

BOOK REVIEWS

Diagnostic and Therapeutic Technic. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M.D., Clinical Professor of Surgery, New York Polyclinic. Second edition, Thiroughly Revised. Octavo of 834 pages, with 860 illustrations. Philadelphia and London, 1915. Cloth, $5.00 net; half morocco, $6.50 net. W. B. Saunders Company, Philadelphia, London.

While this admirable compendium contains a wealth of material of the greatest possible importance to the practitioner, it somehow seems to fall short of being a practically useful work.

A great portion of the book is devoted to methods that belong in the hands of the specialist and should be sought for in the special text-books.

There is much contained in this volume that no practitioner should ever seek in a text-book but should have learned in the clinic or at the bedside.

These points give the reasons why this work should not be added to the working library but place it in line with the dictionaries. In other words for a positive clinical manual it is not exhaustive enough and is too elementary.

G. H. T.

Medical Diagnosis. By Arthur Latham, M. D., F. R. C. P., and James Torrens, M. B., B. S., M. R. C. P., Both of St. George's Hospital, London. Pp. 641; 74 illustrations. New York, Macmillan Company; 1915.

This book of large type and clear, concise sentences represents a well ordered, rather brief attempt to give the student and practitioner the most useful clinical and laboratory details necessary for the purpose of making scientific diagnosis. The essentials in these matters have been brought well up to date and a glance at any one topic gives one the important facts. It is, in short, a skeleton upon which a thorough work could be built, but it must be admitted that the authors have succeeded in carrying out their purpose very nicely so that for those requiring this kind of reference, this work fills the requirements. H. F. A.

Worry and Nervousness. By William S. Sadler, M. D. A. C. McClurg & Co., Chicago, 1914.

This lengthy volume of 535 pages has been written primarily for the layman suffering from "nerves."

The simplicity of its exposition makes it a good "primer" for a physician not especially trained in psychic disturbances, for it gives in great detail a description of the various functional disturbances and their treatment. But this book, in the hands of a nervous layman, is very liable to produce an increase in the number of symptoms by the very means through which the author would prevent them, viz: by suggestion. In place of giving the book to the patient it would be a thousand-fold better to read short pertinent paragraphs to the patient to increase the effect of "positive" suggestion. This has worked more effectively than permitting the patient, already too introspective, to become acquainted with many more possible symptoms. The book has value as a primer of psychotherapy, but should be used only under the supervision of a physician who has some knowledge of abnormal psychology.

J. M. W.

Students' Manual of Gynecology. By John Osborn Polak, M. Sc., M. D., F. A. C. S., Professor of Obstetrics and Gynecology, Long Island College Hospital; Professor of Obstetrics in the Dartmouth Medical School; Gynecologist to the Jewish Hospital; Consulting Gynecologist to the Bushwick, Coney Island, Deaconess' and Williamsburg Hospitals, Brooklyn, and the Peoples Hospital, New York; Fellow American Gynecological Society, etc. 12mo, 414 pages, illustrated with 100 engravings and 9 colored plates. Cloth, $3 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

In a volume of three hundred and ninety-eight pages the author has well succeeded in presenting most of the essential points of gynecological symptomatology, diagnosis, and treatment. The subject matter is well presented and easily read, and will give any student a good introductory knowledge. C. B. M.

Obstetrical Nursing. A Manual for Nurses and Students and Practitioners of Medicine. By Charles Sumner Bacon, Ph.B., M.D., Professor of Obstetrics, University of Illinois and the Chicago Polyclinic; Medical Director, Chicago Lying-In Hospital and Dispensary; Attending Obstetrician, University Chicago Polyclinic, Hernotin, German and Evangelical Deaconess Hospitals. 12mo, 355 pages, illustrated with 123 engravings. Cloth, $2.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

While this little volume is intended as a "Manual for Nurses, Students and Practitioners of Medicine," it will find its greatest usefulness in the hands of the nursing profession. It is simple, well arranged and well written. The first chapter on the nurse's duties is most excellent and should be read by every nurse that contemplates doing obstetrical nursing. The advice as to dress, exercise, diet, etc., during pregnancy is good. The chapter on the duties of the nurse while the patient is in labor is very thorough as regards cleanliness and asepsis but it does not seem justifiable to allow the nurse to make vaginal examinations. The same information can usually be obtained by rectal examination and the patient is subjected to less danger of infection. The chapters on the Puerperium and the Infant are interesting and instructive. The book as a whole is to be highly recommended and should be well received. H. A. S.

The Practical Medicine Series. 1914. Year Book Publishers, Chicago.

Obstetrics, Vol. VII. Edited by Joseph B. De Lee & Herbert M. Stowe. Price, $1.35.

An excellent and well digested review of the year in obstetrics, both of the foreign and American literatures.

Materia Medica & Therapeutics, Preventive Medicine, Climatology. Vol. VIII. Edited by Geo. F. Butler, Henry B. Favill, Norman Bridge. Price $1.50.

This volume is so much condensed that a great deal of important matter has been omitted from each subdivision, thus diminishing the value of the book as a comprehensive guide.

Nervous & Mental Diseases. Volume X. Edited by Hugh T. Patrick and Peter Bassoe. Price, $1.35.

In this number of the Practical Medicine Series most of the American and some of the foreign work in these fields is quite thoroughly abstracted and very satisfactorily presented. G. H. T.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume IV, number I (February 1915). Octavo of 185 pages, 41 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published bi-monthly. Price per year: paper, $8.00; cloth, $12.

Contents.

Murphy's clinical talks on surgical and general diagnosis.

The relation of cancer research to the clinical aspects of cancer.

Aneurysm of the brachial artery—endoaneurysmorrhapy.

Division of the brachial plexus at the level of the first rib. Suturing of the divided nerve-trunks.

Mixed round- and spindle-cell periosteal sarcoma of the right femur. Disarticulation of the hip.

Series of drawings illustrating Dr. Murphy's method of bone transplantation for the non-union of the tibia, cases of which have already been reported in the Clinics.

Open reduction of a posterior dislocation of the spine at the level of the second lumbar vertebra. Laminectomy.

Old compound fracture of the right malar bone resulting in loss of the external wall of the orbit. Outward dislocation of the eyeball. Unsuccessful paraffin injection. Successful bone transplantation.

Ununited birth fracture of the clavicle. Ends freshened and united with a lane plate after invagination.

Carbuncle of the arm. Septicemia. Metastatic pleurisy. Death.

Contracting cicatrices on index-finger and thumb. Excision. Plastic operation.

Lacerated wound of thumb. Emergency case.

Malunion of a fractured femur with great angular deformity. Open reduction and plating. Hemorrhagic cyst at the fracture site.

A talk on a case of gangrenous appendicitis operated the previous evening.

Diseases of the Heart. By John Cowan, D.Sc., M.D., F.R.F.P.S., Professor of Medicine, Anderson's College Medical School; Physician, Royal Infirmary; Lecturer in Clinical Medicine in the University of Glasgow; Examiner in Medicine, Royal Army Medical College. Octavo, 458 pages, with 199 illustrations. Cloth, $4.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This volume has a distinct place in recent medical literature and brings very satisfactorily under one cover the newer outlook on the pathological physiology of the heart. It is a most intelligible exposition of the subject put forward in such a readable fashion that even those utterly unversed in the special knowledge of the heart, may approach it not only without fear but even with pleasurable anticipation. The form of the volume is most convenient, and the numerous tracings and diagrams supplied are apt and well chosen. Quite correctly, the subject of vascular diseases, is not comprehensively covered, and it seems rational that in the newer text books and monographs, cardiac diseases and vascular diseases will be treated under separate covers.

Naturally, this volume must suffer from the criticism due any volume on the subject published at this particular era. Owing to the vast amount of research going on, and the small amount of matter as yet made quite clear, such volumes are quickly out of date and need revision and addition almost as soon as they are printed. The reviewer is quite certain that Dr. Cowan will supply a revised edition shortly, and from the promise given by the present book, the new one should also be of great value. H. I. W.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M.D., F.R.S., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins Unisity, Baltimore; in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and Thomas McRae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1,000 pages each. Volume IV. Diseases of the Circulatory System; Diseases of the Blood; Diseases of the Lymphatic System; Diseases of the Ductless Glands; Vasomotor and Trophic Disorders. Just ready. Price per volume, cloth, $5.00, net; half morocco, $7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

Volume IV shows a slight change from that of the previous edition by the addition to this volume of the section on the ductless glands and that on vasomotor disorders. Of exceptional interest is the admirable article on cardiac mechanism by Thomas Lewis. It is perhaps the clearest summary yet published of the results of recent work on heart action and their clinical application. The chapter on congenital heart lesions by Maud E. Abbott has been enlarged and is indeed exhaustive. That on blood by Cabot shows revision and minor changes throughout. Longecope's able article on Hodgkin's Disease gives an unchanged prognosis despite the recent work on its etiology and treatment. In the present volume the spleen is grouped not with the lymphatic system but among the ductless glands. The articles upon the latter are brief, but a trifle disappointing. Pratt's chapter on hemophilia is brought well up to date with an excellent discussion of the newer theories of coagulation. The articles in this volume are of high grade. H. S. F.

SOCIETY REPORTS

FRESNO COUNTY.

The Fresno County Medical Society has held three well attended meetings this year on the first Tuesdays of January, February and March.

At the February meeting the following officers were chosen: President, Dr. J. L. Maupin; First Vice-President, Dr. R. M. Jones; Secretary, Dr. L. R. Willson; Assistant Secretary, Dr. C. D. Sweet; Treasurer, Dr. F. M. Hayden; Delegate to the State Society, Dr. C. O. Mitchell.

At the same meeting the routine business of the Society was placed in the hands of a board of five governors, one of whom is to be elected each year to serve five years. Dr. G. H. Aiken was elected to this board for one year, Dr. D. H. Trowbridge for two years, Dr. W. F. Barr for three years, Dr. J. R. Walker for four years, and Dr. L. R. Willson for five years.

After the election, two very interesting papers on Eugenics and The Ring to Ring Incision in Hernia were read by Dr. Harry M. Sherman of San Francisco.

At the February meeting Dr. C. O. Mitchell gave a talk on Asiatic Cholera, and Dr. C. D. Sweet exhibited some cases of bronchial gland tuberculosis with radiograms.

This month Dr. B. F. Walker of Stockton, who has lately returned from service in a French Red Cross Hospital, told us of his experiences in a most interesting manner; and Dr. R. M. Jones exhibited a case of tabes. Drs. George L. Long of Fresno and James Allen McKenny of Parlier were elected to membership. Twenty dollars was subscribed to aid the California Association for the Study and Prevention of Tuberculosis.

Dr. C. D. Sweet was appointed to report each meeting of the Society to the State Journal.

On Tuesday, April 6, the regular monthly meeting of the Society was held in the offices of Drs. Anderson and Pettis, with thirty-eight members and visitors present.

Dr. C. L. A. Rinker of Madera was elected to membership.

A motion was passed to use every endeavor to have the 1916 Annual Meeting of the State Society in Fresno.

A committee was appointed to confer with the Fresno County Bar Association in regard to a future joint meeting.

Resolutions commending the work of Dr. L. R. Willson as City Health Officer, and asking the Mayor and City Board of Health to continue him in office, were passed.

The scientific program consisted of a paper on A New Procedure for Correction of Retrodisplacement of the Uterus, by Dr. S. H. Buteau of Oakland; and A Discussion of Various Procedures for Correction of Retrodisplacement, illustrated by lantern slides, by Dr. C. A. Dukes of Oakland. Both parts of the program were much enjoyed, and the members of the Society feel greatly indebted to Drs. Buteau and Dukes.

After the usual social hour the Society adjourned.

CLIFFORD D. SWEET, Asst. Secretary.

LOS ANGELES COUNTY EYE AND EAR SECTION.

The monthly meeting of the Eye and Ear section of the Los Angeles County Medical Association was held in the office of Dr. Frank W. Miller, 1020 Merchants' National Bank Bldg., at 8 o'clock in the evening of April 5th.

The Chairman, Dr. Hill Hastings, presided.

Clinical cases were exhibited by the following:

Dr. C. G. Stivers—Double ethmoid exenteration showing the orifices of the sphenoid sinuses. A previous operation by a Boston Rhinologist was followed by a small septal perforation through which the patient could whistle at will, and often-

times in conversation during the formation of the nasal sounds m, n, ng. The perforation is to be closed by a plastic operation.

Dr. Frank Detling showed a case of tooth in the maxillary antrum and a Roentgenogram of it, in situ.

Dr. F. D. Bullard, a case of Cycloplegia luetic.

Dr. J. M. Brown reported two cases of Herpes—with the blisters on the side of the face, tongue, lips and tympanic membrane.

Dr. Kelsey reported a case of steel in the eyeball removed by the magnet.

Dr. J. J. Kyle—Roentgenogram of the semicircular canals and cochlea in a child; also three cases of Erysipelas in operative cases.

Dr. Albert Soiland read his paper "Roentgenologic interpretation of ordinary skull conditions," illustrated by many X-ray pictures.

After a spirited discussion as to the value of X-rays, and the necessity of the clinician knowing the angle at which the X-ray was taken, and the great value of correct interpretation, the members adjourned.

C. G. STIVERS, M. D.,
Secretary.

SACRAMENTO COUNTY.

Forty-seventh Anniversary Meeting celebrating the founding of the Sacramento Society for Medical Improvement was held at the Hotel Sacramento, at 7:30 p. m. The proceedings of the Society consisted of a banquet which was followed by the paper of the evening, "Tuberculosis of the Upper End of the Femur," by T. W. Huntington, M. D., San Francisco, California.

F. F. GUNDRUM, M. D., Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February, 1915, the following meetings were held:

Section on Medicine, Tuesday, February 2d.

1. Amaurotic Family Idiocy. J. M. Wolfsohn.
2. The Pathology of Amaurotic Idiocy. Jean Oliver. Discussed by W. P. Lucas, H. Barkan and L. D. Green.

General Meeting, Tuesday, February 9th.

Diphtheria in San Francisco:

1. Difficulties encountered in controlling the epidemic. (Illustrated by lantern slides.) W. C. Hassler.
2. The reduction of diphtheria morbidity. W. A. Sawyer, Director State Hygienic Laboratory, Berkeley.
3. Practical value of Schick's reaction. W. P. Lucas.
4. The carrier problem in diphtheria. W. H. Kellogg.
5. The epidemic from the hospital standpoint. A. A. O'Neill.
6. The epidemic from the school standpoint. T. D. Maher. Discussed by A. Roncovieri, Supt. of Schools; R. G. Brodrick; Mrs. Graupner of the Civic League; Mr. Arnstein of the Board of Health; W. Ophüls; Miss Sweeney; A. L. Fisher; Miss Regan of the Board of Education; A. Brown and Mr. Judell of the Board of Public Works.

Section on Surgery, Tuesday, February 16th.

1. Case of Fracture of the Clavicle by Muscular Action, without Blow or Fall. P. Campiche. Discussed by E. Rixford.
2. Personal Experiences with Cancer of the Rectum. E. Rixford. Discussed by T. W. Huntington, C. G. Levison, A. Newman, A. J. Zobel and J. Rosenstirn.
3. The Ring-to-Ring Incision in Herniorrhaphy. H. M. Sherman. Discussed by J. Rosenstirn and P. Campiche.

Section on Eye, Ear, Nose and Throat, Tuesday, February 23d.

1. Demonstration of Patient operated upon for Sarcoma of the Nose. H. B. Graham.
2. Demonstration of Patient previously shown by H. Barkan: Neuritis and Optic Atrophy (right). Could see only 6/60 before operation on ethmoid; can now read 6/18.
3. Slides from Case of Hyperkeratosis of Tonsil. H. B. Graham. Discussion on above cases by H. Kingwell, C. Welty, M. Fredrick, H. Graham, H. Horn and G. P. Wintermute.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of March, 1915, the following meetings were held:

Medical Section, March 2, 1915.

1. The Blood in Leukemia. H. R. Oliver.
2. Benzol Treatment of Leukemia. W. W. Boardman.
3. Roentgen Ray Treatment of Leukemia. H. E. Ruggles. Discussed by H. C. Moffitt and T. Addis.

General Meeting, March 9, 1915.

1. Demonstration of Case of Sympathetic Ophthalmia. C. S. G. Nagel. Discussed by W. F. Blake.
2. Report of Cases from the Medical Dept., St. Luke's Hospital:
   A. Cancer of liver, probably secondary to previously removed growth in breast, in unmarried young woman.
   B. Case of nephritis in a child of 11 yrs., with some unusual clinical features. Wm. Kenney. Discussed by J. Wilson Shiels, S. O. Beasley and H. C. Moffitt.
   C. Case of pernicious anemia.
   D. Case of secondary anemia. J. W. Shiels.
3. St. Francis Hospital. Presentation of Case Histories (illustrated by lantern slides). J. H. Graves.
   A. An interesting case of hour-glass stomach.
   B. X-ray findings in esophageal carcinoma.
   C. An obscure case of gall stones.
   D. Treatment of goiter by injections of boiling water.
   E. End results of paraffin injections for correction of deformity. Cases discussed by R. L. Rigdon and C. W. Lippman.
4. Report of the California Social Hygiene Society. A. E. Graupner, S. A. Goldman.

Surgical Section, March 16, 1915.

1. Demonstration of Patient. Sarcoma of Septum; Operation; Recurrence; Treatment with Radium; Patient Free from Recurrence for over a Year. Henry Horn.
2. X-Ray Plates of Chronic Appendices. C. W. Lippman.
3. On the Treatment of Closed Fractures; a Plea Against Unnecessary Operation. P. S. Campiche. Discussed by J. T. Watkins, E. Rixford, J. Rosenstirn, C. C. Crane and A. S. Keenan.
4. Some Remote Effects of Head Injury. H. C. Naffziger. Discussed by E. Rixford, L. Eloesser, H. Wright and S. Hyman.

Eye, Ear, Nose and Throat Section, March 23, 1915.

1. Demonstration of Cases:
   A. Impairment of vision, greatly improved by operation on septum. L. D. Green. Discussed by H. McNaught and A. S. Green.
   B. Tuberculosis of Ear. Operation followed by recovery. C. F. Welty.
2. Experiences in Eye, Ear, Nose and Throat Involvement at the Isolation Hospital. A. A. O'Neill.

3. The Eye in Infectious Diseases. H. Barkan.

4. Lantern Slide Demonstration of the Lesions of the Mucous Membranes in Infectious Diseases. H. Morrow.

5. The Tonsil as a Carrier in Diphtheria. C. F. Welty. Discussed by J. Kingwell and H. B. Graham.

Urological Section, March 30, 1915.

1. Luetic Advanees. Louis Gross.

2. Some Typical Therapeutic Experienees with Syphilitie Patients. V. G. Vecki. Diseussed by A. Grosse, R. L. Rigdon, W. B. Stevens, S. O. Beasley and Captain Nichols.

PROCEEDINGS OF THE SAN FRANCISCO POLYCLINIC SOCIETY.

San Francisco, Mareh 18, 1915.

The regular alternate monthly meeting of the San Franciseo Polyclinic Society was held in the Polyclinie Building at 8:45 p. m., Dr. Alfred J. Zobel in the ehair.

The very interesting scientific program was as follows:

I. Paper by Dr. D'Arey Power on "Abarticular Gout." Diseussed by Drs. J. Mora Moss and A. J. Zobel.

2. Demonstration of eases by Dr. Henry Horn: (a) "Case of Stammering"; (b) "Case of Careinoma of the Larynx." Diseussed by Dr. Sanford Blum.

3. Demonstration of cases by Dr. H. A. L. Ryfkogel: (a) "Case of Salivary Fistula"; (b) "Case of Careinoma of Tongue."

4. Paper by Dr. A. S. Green on "Reeent advanees in the treatment of different forms of cataraet." Diseussed by Dr. A. Cohn.

5. Remarks on "End results of Urethral Stricture," with presentation of specimens. Dr. Martin Krotoszyner, assisted by Drs. W. B. Stevens and G. W. Hartman.

The following were present:

Members—Drs. A. S. Green, J. M. Moss, L. D. Green, V. Hulen, A. J. Zobel, H. Horn, G. W. Hartman, D'Arey Power, A. Cohn, V. Goldman, S. Bunnell, R. S. Martin, A. L. Fisher, G. H. Taubles, F. G. Burrows, Herbert Cohn, S. A. Goldman, H. A. L. Ryfkogel, R. P. Giavonnetti, S. Blum, M. Krotoszyner, W. B. Stevens, C. F. Welty, H. P. Robarts.

Visitors—Drs. Claydon, Minneapolis; Hathaway, McKinnon.

Following the scientific program the meeting adjourned to a eafe for refreshments.

HARRY P. ROBARTS, See'y.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medieal Soeiety was held at the residenee of Dr. R. R. Hammond, Friday evening, March 26. The following members were present: Drs. R. R. Hammond, B. J. Powell, L. R. Johnson, R. T. McGurk, J. V. Craviotto, S. E. Latta, H. E. Sanderson, H. J. Bolinger, C. F. English, E. A. Arthur, W. F. Priestly, J. D. Dameron, I. S. Zeimer, W. J. Young, W. J. Baekus, R. B. Knight, C. E. Stagner, S. P. Tuggle, J T. Davison, J. D. Young, Margaret Smyth, H. C. Petersen, Minerva Goodman, E. L. Gnekow, W. W. Fitzgerald, L. Dozier, F. W. McKibbon and Smith of Oakdale, E. V. Falk and B. F. Surryhne of Modesto, N. B. Gould of Ripon and Dewey R. Powell with Dr. William Fiteh Cheney and Dr. Stanley Stillman of San Franeiseo as guests.

At the conclusion of the routine business of the meeting, President McGurk introduced Dr. William Fiteh Cheney, who spoke in a thorough and praetical manner on the medieal aspeet of "Congenital Hypertrophie Pyloric Stenosis." The surgieal side was taken up by Dr. Stanley Stillman. After diseussing the subject freely, the members adjourned to the dining room, where they were served with delightful refreshments, which were a fitting climax to what was, in the point of attendance, the largest meeting in the history of the society, and from the standpoint of scientific interest, one of the most instruetive evenings we have had.

DEWEY R. POWELL, Secretary.

SOUTHERN CALIFORNIA MEDICAL SOCIETY.

The fifty-seeond regular semi-annual meeting of the Southern California Medieal Society will be held in San Diego on July 8th and 9th, 1915.

The date of the regular meeting has been ehanged, by the exeeutive committee, from the first Wednesday and Thursday in May to Thursday and Friday of the above dates in July. This has been done on aecount of the meeting of the American Medical Assoeiation in San Franeisco the latter part of June, and it is hoped that some of our friends from the east may be indueed to visit San Diego and attend our meeting there, and assist us with the program.

F. W. THOMAS, President.
WALTER BREM, Seeretary.

AMERICAN PROCTOLOGIC SOCIETY.

The seventeenth annual meeting of the American Proetologic Society will be held in San Franeisco in one of the halls of the Civie Auditorium on June 21st and 22nd, 1915.

Officers of the Society are Dr. Louis J. Krouse, of Cineinnati, Ohio, president; Dr. Collier F. Martin, of Philadelphia, Pa., viee-president, and Dr. Alfred J. Zobel, of San Franeiseo, Cal., secretary-treasurer.

Visiting doetors who are interested in the study of diseases of the reetum and colon are welcome to attend the meeting and take part in the diseussions.

ALFRED J. ZOBEL, Secretary.

PACIFIC ASSOCIATION OF RAILWAY SURGEONS.

San Franeiseo, Mareh 29, 1915.

To Members:

The Thirteenth Annual Meeting of the Pacific Association of Railway Surgeons will be held in San Franeiseo on Friday, June 25th, 1915.

It has been deeided to dispense with the scientifie program as the Amerieau Medical Association meets here during this week and undoubtedly a scientifie feast will be in store for you.

A trip to Mt. Tamalpais, over its seenic railway, has been arranged for members and their families. Will leave San Franeiseo, via Sausalito Ferry, Friday, June 25th, at 1.45 p. m.; on arrival at the summit an excellent "California" dinner will be served at the Tavern of Tamalpais; a boat will meet the party on the return at Sausalito and land them at the Panama-Paeifie Exposition grounds, a most beautiful sight, particularly approaching the Fair by water and viewing the wonderful illumination; the party will then be at freedom to enjoy the wonders of the most magnifieent fair the World has ever witnessed.

We have given but one day to our meeting as many conventions are to be held in San Franciseo during this week and there are a thousand and one other attractions. The following are some of the eonventions whieh meet here:

Amerieau Medieal Assoeiation.
Amerieau Hospital Association.
Amerieau Association of Medical Examiners.
Amerieau College of Surgeons.
American Therapeutic Society.
American Proetologie Soeiety.

American School Hygiene Association.
American Academy of Medicine.
Medical Society, State of California.

You cannot afford to miss the scenic trip to Mt. Tamalpais, the excellent dinner at the Tavern, or the delightful boat ride to "Jewel City," the most beautiful of all fairs. No expense to members and their families.

Very truly yours,

LOUIS P. HOWE, M. D.,
Secretary.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

The Pacific Coast Oto-Ophthalmological Society meeting will be held in the Auditorium, San Francisco, June 15, 16 and 17, 1915.

The Plaza Hotel has set aside one hundred rooms for this meeting. The rooms must be reserved before May 15, 1915, at which date all rooms not engaged will be canceled.

Following is the provisional program:

Tuesday, 10 A. M.

Address of Welcome—
Harry G. Sherman, President of the California State Medical Society, San Francisco.
Address of Welcome—
Kasper Pischel, Chairman of the Eye, Ear, Nose and Throat Section of the California State Medical Society, San Francisco.
Address of Welcome—
Harrington B. Graham, Chairman of the Eye, Ear, Nose and Throat Section of the County Medical Society, San Francisco.
Address of Welcome—
Herbert C. Moffitt, President of San Francisco County Medical Society, San Francisco.
Address of the President—
Hayward G. Thomas, Oakland, Cal.

Tuesday 2 P. M.

1. Some Original Operations Intended to Relieve or Cure Chronic Glaucoma by Capillary Drainage; Illustrated by Stereopticon Views, Casey A. Wood, Chicago, Illinois.
2. Report of Cases Operated by the Elliott Method, Walter R. Parker, Detroit, Michigan.
3. Medical Aspect of Glaucoma, Martin Fisher, Cincinnati, Ohio.
4. Subject to be announced. Roderic O'Connor, Oakland, Cal.
5. Local Anesthesia in Surgery of the Iris and Lens, P. de O'Barrio, San Francisco, Cal.

Wednesday, 10 A. M.

6. Subject not announced. Edward E. Maxey, Boise, Idaho.
7. Indications for Operative Interference in Accessory Sinuses of the Nose, John J. Kyle, Los Angeles, Cal.
8. Eye and Orbital Lesions Secondary to Nasal Affections, William Ford Blake, San Francisco, Cal.
9. Subject not announced. R. W. Perry, Seattle, Wash.
10. Diphtheria Carriers, Arthur A. O'Neil, San Francisco, Cal.

Wednesday Afternoon.

Reserved for the Exposition. Dinner at Exposition Wednesday evening.

Thursday 10 A. M.

11. Ideal Mastoid Operation, H. O. Reik, Baltimore, Maryland.
12. Subject to be announced. Harold Gifford, Omaha, Nebraska.
13. Report of a Case. Herbert Cohn, Hogan and Welty, San Francisco, Cal.
14. Tonsils and Adenoids from the Standpoint of the Pediatrist, Sanford Blum, San Francisco, Cal.
15. Subject to be announced, A. R. Irvine, Salt Lake City, Utah.

Thursday, 2 P. M.

16. Tuberculous Lesions of the Retina and the Retinal Vessels, Edward Jackson, Denver, Colorado.
17. Cataract Operations, Vard H. Hulen, San Francisco.
18. The Smith Operation, A. S. Green, San Francisco, Cal.
19. Pulsating Exophthalmos Treated by Slow Occlusion of the Common Carotid Artery with the Neff Clamp, Stephen D. Brazeau, Spokane, Wash.
20. Observations on the Use of the Tropometer, Joseph L. McCool, Portland, Ore.

Friday morning the following men have signified their intention of doing work at the various hospitals:

Edward Shortlidge, French Hospital; 9 a. m. Demonstration of cases and enucleation of tonsils.

Doctor A. S. Green, Polyclinic Hospital, 9 a. m., the Smith Operation.

Doctors Cohn and Moore, 10 a. m., Polyclinic Hospital, enucleation of the tonsil.

Doctor Henry Horn, Polyclinic Hospital, 11-1, Broncoscopy and tonsil operation. .

Doctor Vard H. Hulen, New City and County Hospital, 9 a. m., cataract operations.

Doctor Cullen F. Welty, New City and County Hospital, 9 a. m., radical mastoid operations.

The regular Ear, Nose and Throat Clinic at Stanford Medical College from 2 to 4 p. m., Friday. Doctor E. C. Sewell in charge.

Undoubtedly there will be more clinics held on Friday morning, but this is all that have responded up to the present time.

Very truly yours,

CULLEN F. WELTY,
Secretary.

THE SOCIETY OF AMERICAN BACTERIOLOGISTS.

Glenolden, Penna., March 20, 1915.

The Council of the Society of American Bacteriologists has decided to hold a special summer meeting in San Francisco, August 3, 4 and 5, 1915. The chairman of the local committee of arrangements is Dr. Wilfred H. Manwaring, Stanford University, California.

THE SEVENTH PAN-AMERICAN CONGRESS.

This will meet in San Francisco, June 17th-21st inclusive. It assembles pursuant to invitation of the President of the United States issued in accordance with an act of Congress approved March 3, 1915.

The countries and colonies embraced in the Congress are the Argentine Republic, Bolivia, Brazil, Canada, Columbia, Cuba, Chile, Costa Rica, El Salvador, Ecuador, Guatemala, Honduras, Haiti, Hawaii, Mexico, Martinique, Nicaragua, Panama, Paraguay, Peru, Santo Domingo, United States, Uruguay, Venezuela, British Guiana, Dutch Guiana, French Guiana, Jamaica, Barbadoes, St. Thomas and St. Vincent. The organization of the Congress is perfected in these countries and the majority of them have signified their intention to be represented by duly accredited delegates.

The Congress will meet in seven sections, viz: (1) Medicine; (2) Surgery; (3) Obstetrics and Gynecology; (4) Anatomy, Physiology, Pathology and Bacteriology; (5) Tropical Medicine and General Sanitation; (6) Laryngology, Rhinology and Otology; (7) Medical Literature.

All members of the organized medical profession of the constituent countries are eligible and are invited to become members. The membership fee is $5.00 and entitles the holder to a complete set of the transactions. Advance registrations are solicited and should be sent with membership fee

to the treasurer, Dr. Henry P. Newman, Timken Building, San Diego, California.

The general railroad rate of one fare for the round trip, good for three months, made on account of the Panama-Pacific Exposition at San Francisco, and the California Exposition at San Diego is available for the Pan-American Medical Congress.

The Palace Hotel will be headquarters.

The First Pan-American Medical Congress was most successfully held in the United States in 1893. Five intervening Congresses have been held in Latin American countries. It now devolves upon the medical profession of the United States to make this, the seventh, the most successful in the series.

Charles A. L. Reed, President, Union Central Building, Cincinnati.

Harry M. Sherman, Chairman Committee of Arrangements, 350 Post St., San Francisco.

Ramon Guiteras, Secretary General, 80 Madison Avenue, New York City.

Philip Mills Jones, Special Committee on Hotels, 135 Stockton St., San Francisco.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

NEVADA STATE SOCIETY MEETING.

Papers for next meeting of Nevada State Medical Association; meets June 17, 18, 19, 1915, at Reno, Nevada:

Dr. J. W. Thorne, San Francisco, Cal., Management of the Larger Joints Following Trauma.

Dr. H. H. Yerington, San Francisco, Cal., High Calory Feeding in Typhoid Fever.

Dr. A. B. Spalding, San Francisco, Cal., Immediate Perineorrhaphy.

Dr. F. S. Dolley, San Francisco, Cal., Infections of the Hand.

STATE COMPENSATION INSURANCE FUND.

Care of Industrial Accidents.

To the Medical Men of California.

Gentlemen:—This problem, a new one, has been met most adequately. The character of the work has been, on the whole, excellent. The fine spirit of co-operation and the general good results shown have been most gratifying to the Fund.

The Fund welcomed the agreement entered into by the State Medical Society under which any licensed practitioner of medicine and surgery might care for cases of accidental injury coming under its jurisdiction. However, the State Compensation Insurance Fund is an insurance carrier doing business in competition with other insurance carriers in this State, and as the result of this, has had to adopt a schedule of fees to cover services rendered by medical men to individuals whose employers are insured with it.

The Fund realizes that the fees in this schedule are small, and that the demands made upon physicians in many of these cases are great; but it has in the past and will in the future, by a strict interpretation of the intent of the schedule, and by a prompt settlement of accounts, make the ultimate return to the medical men commensurate with the service rendered and the financial standing of the injured individual.

The Fund deems that the friendship and co-operation of the medical men of California are valuable assets, and realizes that good, properly recompensed medical attendance on its cases will not only diminish the actual cost of medical expense, but will be an all important factor in lessening future compensation.

In this sense, then, the Fund deplores any activity that will tend to lower fees, or that will interfere with the prerogative of any regular licensed practitioner in attending individuals suffering from industrial accidents.

Yours very truly,

STATE COMPENSATION INSURANCE FUND,

By Morton R. Gibbons,
Medical Director.

EFFECTS OF THE HARRISON LAW.

"When the Harrison law became effective, March 1, it was widely predicted that the result would be a besieging of hospitals by crazed drug addicts, a crime wave of national scope and a trail of suicide and death across the country. A month has passed, and while the results have not been as terrible as the early hysteria painted them, have not even approximated the glaring headline predictions of the yellow press, they have nevertheless," says the Journal of the American Medical Association, "been apparent to physicians and to others who come in daily contact with drug traffic. In the Philadelphia General Hospital—and this is true of practically every hospital in the country in which drug addictions are treated—the number of admissions has greatly increased. Without doubt the law has forced numerous habitues, who otherwise might have been satisfied to continue as such, to apply to physicians and institutions for treatment. Further, there is no doubt that the large majority of these unfortunates will be freed of their habit. The increased admissions to these hospitals do not represent an increase in drug addictions; they are simply an objective manifestation of the operation of the Harrison law."

A communication, which the Journal publishes, from the Cook County coroner's office, presents the opposite side of the picture. It points to the suicide who anticipates his suffering as his supply of drugs ceases; it indicates the ever-hopeful victims who seek surcease of pain in deadly nostrums, and it hints at the deaths from secondary causes in weakened and collapsed bodies. It should again be emphasized that these reports are not evidence of the existence of enormous numbers of drug habitues; rather they represent the toll of a new law and the throwing of light on a hidden evil.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Cholera Serobacterin, Mulford (Sensitized Cholera Vaccine).—Marketed in packages of three syringes. H. K. Mulford Co., Philadelphia.

Meningo-Serobacterin, Mulford (Sensitized Meningococcus Vaccine).—Marketed in packages of three syringes. H. K. Mulford Co., Philadelphia.

Typho-Serobacterin Mixed, Mulford (Sensitized Typhoid Vaccine).—Packages of three syringes containing graduated mixtures of killed sensitized bacillus typhosus, killed sensitized bacillus paratyphosus A, and killed sensitized bacillus paratyphosus B. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Mar. 13, 1915, p. 909).

Notes of Interest.

The Franco-American Ferment Co.—Lactobacilline preparations:

The Lactobacilline preparations now being advertised direct to the public the Council has voted that their acceptance be rescinded and that these products be omitted from New and Nonofficial Remedies. A report explaining this action has been authorized for publication.

Liquid Paraffin (Liquid Petrolatum).—W. A. Bastedo reports the results of a clinical investigation made under the auspices of the Therapeutic Research Committee of the Council on Pharmacy and Chemistry to determine the relative efficiency of the different preparations on the market. Three specimens were sent out: a heavy Russian liquid petrolatum, a light Russian liquid petrolatum and an American liquid petrolatum—being distinguished only by number of letter. From extended trials in hospitals it is apparent that all acted alike. Only slight differences as to palatability were noted by some (Jour. A. M. A., March 6, 1915, p. 808).

Strychnine and Caffein as Cardiovascular Stimulants.—A. H. Newburgh has studied the effects of strychnine and caffein in acute infectious diseases. He finds that strychnine sulphate in medicinal doses does not increase the output from the heart, slow the pulse or materially raise the blood pressure. He concludes that there is no logical basis for its use as a cardio-vascular stimulant. Further, he finds that caffein sodio-salicylate, in ordinary dosage, does not raise the blood pressure or slow the pulse. His experiments did not determine if caffein increased the blood flow (Arch. Int. Med., Mar. 15, 1915, p. 458).

Sanmetto.—The Council on Pharmacy and Chemistry finds that Sanmetto is a secret nostrum the exploitation of which is an invitation to haphazard, uncritical therapy and a menace to public health. It is claimed that "Sanmetto is a blending of true santal and saw palmetto with soothing demulcents in a pleasant aromatic vehicle," but neither the identity of the "demulcents" nor the quantities of the other ingredients are given. The recommendations for the use of Sanmetto are unwarranted, absurd and vicious. The advertising claims are likely to induce some physicians to belittle the importance of diseases of the sexual organs and to be content with the prescribing of Sanmetto to the detriment of the patient and the danger of the community (Jour. A. M. A., Mar. 13, 1915, p. 926).

Colchi-Sal.—Colchi-Sal is sold by E. Fougera and Co., Inc., in capsules stated to contain the "active principle" of cannabis indica, colchicin, methyl salicylate and "appropriate aromatic adjuvants." It is recommended in "Gouty and Chronic Rheumatic Manifestations," "acute cases of Gout," "intestinal autointoxication of dyspepsia," "bilious headaches," etc. The Council on Pharmacy and Chemistry found Colchi-Sal ineligible for New and Nonofficial Remedies because the indefinite character of the "active principle" of cannabis indica made its composition secret, because it was advertised indirectly to the laity, because unwarranted therapeutic claims were made for it, because the name does not indicate the habit-forming cannabis indica and because the composition was held unscientific (Jour. A. M. A., March 20, 1915, p. 1016).

Waterbury's Compound.—Four years ago the Council on Pharmacy and Chemistry reported unfavorably on "Waterbury's Cod Liver Oil Compound." Having been requested to consider again the product, now known as "Waterbury's Compound," the Council found that there was no evidence that it is a substitute for cod liver oil. It held that Waterbury's Compound is advertised with misleading claims and therefore voted that no further consideration be given to it (Jour. A. M. A., Mar. 20, 1915, p. 1016).

Neurilla.—To show how a practically worthless mixture may be exploited by means of ill-considered testimonials, the Council on Pharmacy and Chemistry publishes a report on Neurilla, apparently the sole output of the Dad Chemical Company. Neurilla, according to the manufacturer's claims, depends for whatever virtues it has on two generally discarded drugs, skullcap and passion flower, present in unstated amounts, "aromatics" and 20.3 per cent. alcohol. It is advertised as a "nerve tonic" and is said to be "A Valuable Aid in the Treatment of Fevers, Colds, La Grippe, etc." Inquiries sent to some of the physicians whose testimonials were used to promote Neurilla brought replies indicating these testimonials to have been given thoughtlessly and on insufficient experience. In most cases the writers stated that they had abandoned the use of Neurilla long ago (Jour. A. M. A., Mar. 27, 1915, p. 1093).

TUBERCULOSIS EXHIBIT AT EXPOSITION.

The California Association for the Study and Prevention of Tuberculosis has an interesting exhibit in the Educational Building at the San Francisco Exposition which all Californians interested in public health should not fail to visit.

The main feature of the exhibit is a large glass map which shows the deathrate from tuberculosis in the different counties and the number of beds provided in institutions for sufferers with the disease. This map is in art glass, arranged with flashes so that any one entering the booth, from any county, can see instantly the problem in their own vicinity.

There are a great many interesting charts dealing with the different phases of the problem, and there will also be some X-ray plates.

The object of the exhibit is, of course, educational; but one of the main reasons for having the exhibit is to show visitors that California has its own problem to handle, and to let them see the lack of hospital care that can be given, and to urge that they keep patients, particularly indigents, in their own States. Thirty per cent. of the deaths from tuberculosis last year in California were among native born.

The exhibit is also intended to create sentiment for Federal legislation. It will be possible to ask for Federal legislation if the subsidy bill, paying

counties three dollars a week for the care of their own cases, passes. It will be necessary to show Congress that California is willing to care for its own people, but that it is not in a position to care for outsiders any longer.

The work of the California Association is going steadily on; new dispensaries are being opened and visiting nurses are being put in the different towns.

SCHICK REACTION.

H. N. Bundesen, Chicago (Journal A. M. A., April 10, 1915), describes Schick's test for the theory of diphtheria antitoxin in the blood, and Römer's method, which consists in the intracutaneous injection in guinea pigs of a definite minute quantity of diphtheria toxin and a definite amount of a serum to be tested for antitoxin. If no necrosis results, the toxin has been completely neutralized. For the carrying out of the Schick test, it is essential to have an accurate 1 c.c. all glass hypodermic syringe, with a scale divided into ten parts and a short, sharp, fine platinum iridium needle, sufficiently fine enough to be introduced between the layers of the skin. It should be introduced with the beveled opening or aspect of the point looking upward, and the head of the syringe lower than the point when introducing the needle into the skin. The technic is described as follows:

"The skin of the flexor surface of the forearm (upper one-third) is prepared by cleaning with tincture of green soap and 95 per cent. alcohol. With the thumb and first finger of the left hand pinch up a small portion of the skin and carefully insert the needle into, but not through the skin, so the opening in the point of the needle is covered and can be seen beneath the superficial layer of the integument. A dilution of a fresh standard diphtheria toxin is made of such a strength that 0.1 c.c. contains 1/50 of the minimum lethal dose for a 250 gm. guinea pig, and this is injected, pressure being exerted in an upward direction. If the injection has been properly given, there is to be seen at once a white bleb-like elevation which persists for several minutes and is distinctly studded with little pits corresponding to the opening of the hair follicles. The results are available at the end of twenty-four hours. If antitoxin is absent or present only in very small amounts—insufficient for protection—a positive reaction appears, which is characterized by a constantly increasing circumscribed area of redness (halo) and induration of from 10 to 25 mm. in diameter that reaches its maximum in forty-eight hours. It persists for about a week, and on fading shows a brownish pigmentation with superficial scaling and a characteristic central infiltration."

Positive reactions indicate that there is less than 1/30 unit of antitoxin in 1 c.c. of blood serum, and the person is liable to diphtheria. Faint reactions point to the presence of small amounts of antitoxin. Tabulated results of 800 cases tested at different ages are given. Bacillus carriers are usually mainly insusceptible. The Schick test gives us a means of telling who is susceptible and who should be injected in case of an epidemic. The danger of cross infection is greatly reduced, and it permits a great reduction in antitoxin bills and the relief of discomfort to the patient.

Schick Test.

Charles Graef and George Ginsberg, New York (Journal A. M. A., April 10, 1915), describe the Schick test and its utility in diphtheria cases. It is not more difficult to make than the Pirquet test for tuberculosis, and consists in the intracutaneous injection of a prepared solution containing minute quantities of diphtheria toxin. This will produce a positive reaction in twenty-four or forty-eight hours if antitoxin is absent in the individual, or so nearly so as to be insufficient for protection. The reaction consists of redness and slight swelling, continuing for a week or more, and leaving a brownish pigmentation and superficial scaling for some time after. In a few older children and adults, there may be a pseudoreaction even when large amounts of antitoxin are present, and this must be carefully distinguished from the true one by its earlier appearance, less sharply circumscribed form, greater infiltration, and its disappearance in twenty-four hours or two days, with absence of superficial scaling. Detailed directions for making the test are given. The author's conclusions are as follows:

"1. The most susceptible age is between 1 and 5 years. 2. Immunity obtained by having the disease or by the use of immunizing doses of antitoxin lasts from a month to several years, varying greatly in different individuals and being very brief in children. 3. The Schick test is a helpful agent in testing the efficiency of immunization by antitoxin as well as the natural immunity existing in many persons. 4. It has helped to place on more certain grounds the assurance that bad cases of diphtheria should receive early and large doses of antitoxin by intravenous injections. Antitoxin is ten times as effective when so used, as compared with the ordinary method of administration. 5. Park has obtained results in families showing a striking similarity in reactions to the test. If the youngest child of a family has a negative reaction, all the older children are likely to be negative, and if the older children are positive, the younger ones are also. When variations are found, the younger children show the positive reaction."

$1,000 PRIZE.

The American Social Hygiene Association has been offered a prize of $1,000 by the Metropolitan Life Insurance Company to be awarded to the author of the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years, approved by a committee of judges to be selected by the Association.

Competition for this prize is open to all.

The Metropolitan Life Insurance Company desires to use the winning pamphlet among its industrial policyholders.

The committee of judges will conduct the competition in accordance with the following conditions:

Contest closes July 31, 1915, at midnight; any manuscript received later will not be considered.

Manuscripts should not exceed 3,500 words and must be in English and must not have been previously published.

Manuscripts must be typewritten on one side only of plain white paper 8"x10½".

Manuscripts must be paragraphed and punctuated for submission as "copy" to printer.

Each manuscript must bear some identifying mark or pen-name, but not the name of the author.

The author's name and address, and the identifying mark or pen-name should be in a sealed envelope, accompanying the manuscript; the face of the envelope should bear the mark or pen-name only.

More than one manuscript may be submitted by the same author.

The winning manuscript, in consideration of the award of $1,000, becomes the property of the donor of the prize, all rights therein being surrendered by the author.

The right to purchase any manuscript submitted, at the rate of 5 cents a word, is reserved by the Metropolitan Life Insurance Company and by the American Social Hygiene Association.

Any manuscript not winning the prize or purchased will be returned to the author if return postage is provided.

Address manuscripts and requests for further information to the American Social Hygiene Association, 105 West 40th Street, New York City.

WARREN TRIENNIAL PRIZE.

Massachusetts General Hospital.

The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation considered worthy of a premium, on some subject in Physiology, Surgery, or Pathological Anatomy; the arbitrators being the Physicians and Surgeons of the Massachusetts General Hospital.

The subject for competition for the year 1916 is on some special subject in Physiology, Surgery or Pathology.

Dissertation must be in either the English, French or German languages, and must be typewritten and suitably bound, so as to be easily handled. Work that has been published previously will not be considered in competition. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation.

Any clew given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same.

The amount of the prize for the year 1916 will be $500.

In case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations will be received until April 14, 1916.

A high value will be placed on original work.

FREDERIC A. WASHBURN,
Resident Physician.

Boston, March, 1915.

NEW MEMBERS.

Craig, John B., San Bernardino.
George, Wm. A., Loma Linda.
Whitmer, Chas. F., Colton.
Shryrock, Alfred, Loma Linda.
Boller, Phil, Los Angeles.
Larson, August H., Los Angeles.
Morse, Jason, Tropico.
Tredway, Edward E., Pasadena.
Loughridge, Jas., Folsom.
Affleck, Jas. T., Sacramento.
Sigwart, Joseph F., Sacramento.
Davis, Henry J., Sacramento.
Rinker, C. L. A., Madera.
Dowling, S. W., Idria.
Anderson, B. C., Barstow.
Parker, Truman A., La Jolla.
Wilson, Henry B., San Diego.
Wegefarth, H. M., San Diego.
Lesem, A., San Diego.
Chappel, H. W., Palo Alto.
Dougherty, Edwin E., Los Angeles.
Merrow, Llewella M., Pasadena.
Colliver, John A., Los Angeles.
Fundenberg, Geo. B., Pasadena.
Jacobs, Joseph, Los Angeles.
Parrish, F. W., Dos Palos, Cal.
Hartwell, Robt. W., Dos Palos.
Larson, Carl Fred'k, Sanitarium, Cal.
Alumbaugh, F. W., Calistoga.
Jordan, Wm. F., Floriston.
Ostrom, Earl E., Loomis.
Kellogg, Preston S., Escondido.
Molitor, Nicholas, San Diego.
Adams, Chas. B., Los Angeles.
Coulter, H. McKay, Pasadena.
Cleland, H. O., Ukiah.
Thomas, Philip M., Elk.
Piersol, F. C., Mendocino.
Wolfe, Homer H., Albion.
Fountain, E. R., Merced.
Aller, D. I., Merced Falls, Cal.
Derrick, Jos. S., Los Angeles.
Swift, E. L. H., Los Angeles.
Granger, A. S., Los Angeles.
McNeile, Olga, Los Angeles.
McNeile, Lyle G., Los Angeles.
Norton, Chas. W., Los Angeles.
Hanlon, E. R., Los Angeles.
Loomis, Melville Le R., Los Angeles.
Lepper, L. E., Pomona.
Swetnam, C. R. K., Los Angeles.
Stoughton, Arthur V., Claremont, Cal.
Brown, Blanche C. B., Los Angeles.
Hitt, A. W., Los Angeles.
Titus, J. H., Ontario, Cal.
Smith, Robt. Lee, Pomona.
Mitchell, Lillian S., Pasadena.
Sunde, P. H., Los Angeles.
Dietsch, Curt O., Los Angeles.
Kerr, A. N., Hawthorne, Cal.
Young, Chas. S., Los Angeles.
Jones, Ellis Wm., Los Angeles.
Mace, Lloyd R., Hollywood.
Hill, Robt. B., Los Angeles.
Brownfield, Wm. H., Los Angeles.
Reed, Wallace A., Covina, Cal.
Old, F. J. T., Los Angeles.
Avery, Lewis G., Los Angeles.
Kirschner, Harry E., Monrovia, Cal.
Holladay, F. S., Los Angeles.
Gallagher, Hiram M., Los Angeles.
Hanford, Frank W., Los Angeles.
Crossan, John W., Los Angeles.
Gilbert, Wm. H., Los Angeles.
Dietrich, Henry, Los Angeles.
Traber, C. H., Reedley.
Lewis, Elizabeth G., San Jose.
Petch, T. R., Eureka.
Rockwell, Orville, Fortuna.
Floreth, O. P., Blue Lake.
Sproat, S. McCoy, Portola, Cal.
Webster, Donald P., Westwood.
White, Geo. S., Los Angeles.
Breneman, Joseph T., Rust, Cal.
Diggins, Edw. A., Antioch, Cal.
Anderson, Axcel E., Fresno.
Benedict, Wm. L., Fresno.
Chadwick, Benj. C., Fresno.
Graham, Lyle, Del Rey, Cal.
Motheral, Raphael, Hanford.
Schottstaedt, Wilhelm E. R., Fresno.
Adams, Jno. E., Oakland.
Grissim, John De L., Oakland.
Moore, Gertrude, Oakland.
O'Connor, Roderic P., Oakland.
Medros, J. J., Hayward.
Long, Geo. L., Fresno.
McKenny, Jas. A., Parlier.
Beard, John L., Healdsburg.
Thompson, Lewis L., Gridley.

RESIGNED.

D'Ancona, A. A., San Francisco.
Tebbetts, Jas. Henry, Hollister.

DEATHS (APRIL).

Hart, Henry Hersch, San Francisco.
Nichols, Henry Lombard, Sacramento, Cal.
Munson, Mary F. (died in Toledo, Ohio).
Upton, Hugh, Upper Lake, Cal.
Burton, B. T., San Francisco.
Farrar, Joseph Teel, Berkeley.
Brown, Jas. W., Grass Valley.
Farnum, Chas. E., San Francisco.
Clark, Chas. F., Woodland.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII JUNE, 1915 No. 6

EDITORIAL NOTES

AMERICAN MEDICAL ASSOCIATION MEETING.

As we have previously mentioned in the JOURNAL, the A. M. A. is to meet in San Francisco during the third week of this present month of June. The House of Delegates will begin its work on Monday, and the scientific sections will begin their programs on Tuesday afternoon, Tuesday morning being given over, as always, to the general public session which will be held in the Columbia Theatre, Geary and Mason streets. Wednesday was set aside by the House of Delegates as a special memorial day to commemorate the work in medicine and collateral science which led to the possibility of digging the canal; for the canal was dug by scientific medicine and not by picks or steam shovels. Just what will be the nature of these commemoration exercises we do not know as the special committee having that matter in charge have not announced their program at the time of writing. There will also be meetings of a number of more or less related bodies, as the American Academy of Medicine, the Therapeutic Society, etc., notices of which meetings have appeared in this JOURNAL in previous issues or will be found elsewhere in the present number. Altogether, the month of June will be quite a busy month, speaking of things medical, and any member will find it much to his advantage and betterment to arrange to spend the latter half of the month in San Francisco. Dr. F. B. Carpenter is Chairman of the Committee on Hotels and if you intend to come to San Francisco for these medical meetings, as of course you do, you had best write to him at once and secure hotel accommodations as all the hotels are now, and more especially will be at that time, crowded. His address is Head Building, San Francisco.

REPORT APPLICANTS.

Again we must urge county society secretaries to report to the State Society office the names of applicants for membership. In the last few weeks we have received notice of three new members, elected to membership in various counties, and it is absolutely certain that none of them would have been elected had the facts in our possession been known to the secretary of the local society. When a man is once in, it is not easy to get him out, and membership in the county and State Societies now means a good deal; a good deal to the member and a good deal to the Society, for any member may be the cause of an expense of thousands of dollars. The weakening of the medical practice law, which continues bravely on from legislature to legislature, will surely mean an influx of undesirables and a lowering of the value of any sort of license to practice. It will also mean, if we make it so, the vastly increased value of membership in a recognized county medical society. Keep that thought in mind.

MEDICAL PIRATES CONVICTED.

For a long time past the Federal Government, through the Postoffice Department, has been getting evidence against a number of licensed medical pirates. Incidentally, it may be said in passing that this JOURNAL has for years held that the licensed physician who is doing wrong or practicing his profession in a disgraceful manner, is infinitely more dangerous and harmful than the unlicensed person be he Chinese "herb specialist" or any other variety. But the licensed crook is hard to get. Generally he follows some one of the several lines of quackery that have been carefully worked out by clever lawyers and are thus held just within the letter of the law. Such as the advertising of cancer cures, for example, which particular thing was carried to the Supreme Court of California, some years ago, and it was by that court held that the quack was within the letter of his legal rights. But it seemed probable that many of this gentry might be caught through the misuse of the mails, and so that was tried with distinct success. There are still a number of men to be accounted for and so the details of the cases will not be taken up until all are ended. Suffice it for the present, that every case that has thus far been taken into court has resulted either in conviction or in the quack pleading guilty. In this work in California, the Federal authorities were greatly helped by the State Board of Medical Examiners.

NAVY MEDICAL CORPS.

An examination for appointment to the Medical Corps of the Navy will be held about July 6th, 1915, and a gist of the requirements, etc., will be found elsewhere in this issue. Examinations are usually held at the various navy headquarters near, or in, the cities of Washington, Boston, New York, Philadelphia, Norfolk, Charleston, Chicago, Mare Island and Puget Sound.

AMENDMENTS TO THE MEDICAL LAW.

The office of the State Board of Medical Examiners has kindly furnished us with a summary of the principal changes made in the law regulating the practice of medicine. The salary of the Secretary may now be made $3,000. As will be seen, the trend of legislation is downward, which was of course expected. Also, we have more kinds of licensed people doing things to the anatomy of other people, for the board now licenses chiropodists. It does not specify, however, that one must have a license in order to have a corn to be chiropodisted; that is a sad omission and certainly should be rectified at the next session of our marvelous legislature—that is, unless another "state song" comes along by that time and takes up too much of their high-priced time. As Dr. Pangloss said, this is indeed the best of all worlds. And he might have added, the most amusing!

"Several amendments have been framed and passed by the Legislature now in session and having been signed by the Governor become effective on or about *July 24, 1915*.

"These amendments known as Senate Bill 443, Benson, make the following changes:

"1. Combines office of Secretary and Treasurer.

"2. Provides that the *Board publish* a directory of every person holding a certificate to practice in this state.

"3. Establishing sub-offices in Los Angeles and San Francisco, and proving that legal action against the Board may be taken in either of these cities.

"4. Provides for the appointment by the Board of qualified commissioners of examination.

"5. Provides for a per diem to members of the Board for correction of examination papers.

"6. Establishes an additional form of certificate to be issued to chiropodists designating the educational standard to be exacted of chiropodists.

"7. Reduces the curriculum for a P. & S. certificate to 4000 hours, the number of hours in each subject being prescribed by law.

"8. Reduces the number of hours required of drugless practitioner applicants to 2000 hours, the number of hours in each subject being prescribed by law.

"9. Prescribes the curriculum to be pursued by applicants for chiropodist certificate.

"10. Re-arranges the subjects of examination for drugless practitioner certificate in order that the Board may determine the additional number of subjects to be taken by the holder of such certificate in order to acquire a P. & S. certificate. The subjects of such examination are specifically stated.

"11. Prescribing the subjects for examination for qualification for a chiropodist certificate.

"12. Providing for the issuance of a certificate to the Army and Navy.

"13. Modifying the reciprocity feature. Demands one year residence in the state issuing the certificate used as the basis of the application.

"14. Adding to the unprofessional conduct classifications. Making two additional causes for revocation: first, excessive use of cocaine, morphine, etc.; second, employment of cappers or steerers.

"15. Directing that the officers of the Court wherein fines for violations of the Medical Practice Act are imposed shall forward the amount of such fine directly to the State Treasurer to be placed to the credit of the Board of Medical Examiners contingent fund.

"16. Directing the answering, under oath, within ten days after demand by the Board, the name of the person or persons associated with or employed by the individual to whom the notice is directed."

PASSED AND FAILED; CALIFORNIA SCHOOLS.

The office of the board of examiners has compiled a list of those graduated by California schools and examined for license by the board for the six years from 1908 to 1913 inclusive. The list will be found on another page of this issue of the JOURNAL and is published for the reason that it is quite interesting and may be useful for reference in the future. Sometimes it is very useful to have such information published. For example, it is not generally known, but it is none the less true, that only through the lists of names of those licensed by the board from 1901 to 1906, which were printed in the JOURNAL, could the record of licentiates be restored after the official records were destroyed in the fire. It is also true that the State Board of Control could never have accurately checked up the Board of Examiners' office except by consulting the records in the office of the State Society. But the Board of Control has never seemed to be sufficiently grateful, somehow!

PRESENT DAY KNOWLEDGE.

The whole range of medical activity is so great and specialization both in research and in practice has so extended the general store of knowledge that very few of us can say with any degree of certainty what is the present day status of those things in medicine which do not come within our own limited range of work and interest. There are many cancer commissions and research laboratories; what is the word to-day on that subject? What is the trend of thought as to the causation of cancer? Has there been any material advance lately in the treatment of epilepsy, or measles or scarlet fever? It has been suggested that these are subjects which would be of interest to all of us, if a summary of to-day's knowledge, put authoritatively and concisely, could be placed before us. The JOURNAL is planning to do this and to pub-

lish from month to month short articles on various phases of medicine, giving the present day status of each particular thing. We will be delighted to receive suggestions. What are the topics which would most interest you? What is there that you would especially like to know about? It is immaterial whether there has been progress or not, so that the truth about things to-day be known. Send in your suggestions or comments and we will be glad to take them up for consideration.

"TWILIGHT SLEEP."

Progress, or if you will, change, is brought about in various ways. It has been quite interesting to see the result of feminine agitation upon scientific medicine. The use of certain drugs for the purpose of obtunding pain or removing memory during confinement has been a matter of scientific investigation for a number of years; the development of this adjunct to obstetrics is still in a formative stage; still, as we might say, in the laboratory. But some lay women writers got hold of the tag end of the laboratory work and lay publications uttered glowing words of unqualified commendation and insisted that no longer should woman suffer the pains of childbirth. Thereupon followed a quiet but none the less very big revolution in the country of the obstetrician. Every woman with child insists that she shall have that child without pain. Radical and conservative alike are confronted by the same problem; the same demand. The physician who would be cautious and wait a few years to see how many babies are injuriously affected, is in the same fix with the ultra radical obstetrician who would try everything new as soon as he hears of it—he must perforce do something to blot out the pains of childbirth. Feminine insistence has forced the hand of scientific research. But something good may come out of it. It is interesting to watch.

APPENDICITIS AND THE LAW.

A number of states have considered in their respective legislatures, proposed bills which would make it more or less of an offense for a surgeon to operate for appendicitis and not produce from the abdomen of the patient, an obviously diseased appendix. Fortunately for the general average of common sense, none of these bills has passed or received markedly serious consideration. It is the duty of every one of us to aid in the education of the general public on these matters, and we can only do that work by thoroughly understanding the facts and by careful, persistent and patient discussion of them with those laymen with whom we come in contact. Consider well the following simple facts: Four cases came within observation in a single week. All had about the same trivial (?) symptoms. Some nausea and vomiting at night. A feeling of indigestion or "gas in the stomach" the next day. Little or no actual pain. No increase in the pulse and no rise in temperature. No marked muscular rigidity but a well defined tender point in the region of the appendix. In two patients, after twenty-four hours, a slight rise in temperature. Consultations were held in all four cases and in each it was unanimously agreed that an immediate operation was imperative. After this decision was reached no time was wasted in taking a leukocyte count save in one case, and in that one it was not especially suggestive. All were operated upon as acute appendicitis cases. In three the appendix was found to be perfectly normal so far as macro- or microscopic examination could determine. But the fourth; the one with symptoms not so marked as in one or two of the others? Quite a different story. Here was an appendix, buried deep down and completely gangrenous; so much so that the greatest of surgical skill was required to get it out even in fragments and not to soil the abdominal cavity. Which was the better course to follow, to operate upon all and have them all alive and well, or to delay with the consequent death of twenty-five per cent. of the number? Even the three who possessed normal appendices are benefited, for the operation may be regarded as a prophylactic one; they need never fear the dreaded appendicitis; it will never bother them. See what a very grave danger to the public welfare any penalizing law on this subject would be. Surgeons would hesitate to operate in cases where the symptoms were no more marked than in these four—and one of the four would probably have died if another twenty-four or forty-eight hours had been allowed to pass with fecal matter and suppuration working away from the bottom of the abdominal cavity. We have allowed the layman too long to joke about mistakes in diagnosis and the removal of healthy appendices. If he had one of these cases he would cease to think it a joke.

POLITICS AND HEALTH-OFFICER.

Down in Fresno, in April, the Health Board sort of got itself into a place where medicine should not be—in practical politics. Politics, the science of government, is a thing that every citizen should interest himself in; but things of medicine and public health should be removed from the "practical" part of politics and be wedded only to the scientific end of government. Dr. L. R. Wilson had been city health officer for some time and was endorsed by the county medical society with remarkable unanimity. The newly appointed health officer, Dr. Sweeney, may be and doubtless is a good man and an excellent physician; there is no reflection upon him. But it is not right that health matters should be the football of politics, nor does it look particularly well for a member of a board of health to propose and vote for his wife to occupy the position of bacteriologist under the board. One might indeed be excused if he should say that this was carrying the patronage pie a little too far and a little too crudely. Even Johnson would hardly do that. Dr. Wilson has been the very able secretary of his society for some years and we are sorry that a political agitation has displaced him as city health officer, which position he filled ably and well.

HARRISON NARCOTIC LAW.

Many letters are still being received asking what a physician may or may not do under the Harrison law. As a matter of fact, the law has in no way invaded the rights of the physician; it has only said that he must not be sloppy about his records, and this is a good thing. Too many physicians are too careless about keeping records of anything relating to their work, and this the JOURNAL has deplored on more than one occasion. You can prescribe any narcotic you think necessary, but you must have registered with the collector of internal revenue and obtained a license; *and* you must put the date, patient's name and your own name in full, on the prescription, together with your license number. It has been ruled that by "name in full" is meant the signature which you ordinarily use to sign legal documents, checks, etc. If you wish to buy narcotic preparations covered by the law to dispense or to use in your practice, you must obtain them on an official blank which the collector sells for one dollar a hundred. If you give away or dispense any of such preparations, you must keep a record of the date and amount and the name of the patient and preserve this for two years. All of which seems to work no hardship upon the physician and indeed is a help, for he now has the assurance that his prescriptions will not be refilled. Elsewhere we publish an abstract of the rulings of the Commissioner on various points of the law. Undoubtedly many of these rulings will be more or less modified as time goes by and it is found how they work. In the main, they seem to be not unjust or too stringent and it will not be long before we all get the habit of following them. They will do us no harm whatever.

INDUSTRIAL SICKNESS INSURANCE.

The JOURNAL pointed out some time ago that, in all probability, a law would be passed in this state, before very long, extending compulsory insurance to disease on very much the same lines as it now applies to industrial accidents. That movement has already begun in the passage of an amendment to the present industrial accident law making it include industrial diseases as well as accidents. How these diseases shall be catalogued—what shall be and what shall not be considered an industrial disease—is, of course, a matter for future study and adjustment by the commission. As a sociologic problem, the whole question of whether or not such industrial legislation is in the main good or bad, is too large to discuss. In the past, judging from a few centuries of development, it would seem that all sumptuary laws tend not to the betterment of the race; nature seems to work things out better, if you give her enough centuries to do it in, if left alone. But then it may be maintained that man's modification or control of the development of man is merely an expression of the working out of nature as found in the mental development of the genus homo. Be that as it may, the present trend is toward radical changes and big, new movements; one of these is the attempt to regulate pauperism and poverty and the burdens that accompany, by such laws as the industrial accident law, the workmen's compensation phase of it, the pension of widowed mothers, and the like. A logical extension of this movement or stress, if you please, is the sickness insurance, compulsory within certain incomes, and this we may confidently expect to see before many years have gone by, or else all signs fail. We might as well be ready for it.

MEDICAL MILK COMMISSIONS.

The American Association of Medical Milk Commissions will hold its annual meeting this year in San Francisco, June 17th and in Berkeley June 18th; on June 19th the Commissions will meet on Mt. Tamalpais. There will be a large number of the most prominent enthusiasts for pure milk the country over, in attendance, and it is expected that this will be one of the most satisfactory meetings the Association has ever held. Dr. T. C. McCleave, of Berkeley, California, is President of the Association.

SENATORIAL SENSE.

Elsewhere in this number of the JOURNAL we publish a transcript of some of the remarks of Senator Benson in discussing one of the medical bills before the lately demised and not lamented legislature. Doubtless many of the solons who stand in support of poor and lower medical laws are as well acquainted with the facts as Senator Benson, but they play the game of votes and peanut politics; talk large on things about which they know better, and so conceal the real issue. At any rate, it is a pleasure to see a man have the courage of his convictions and a willingness to come forward and tell straight out what he knows and knows to be the truth. We desire to extend our thanks and the thanks of the Society to Senator Benson, and all the other members of the legislature who stood for sound medical legislation.

THE DETAIL MAN—AN ECONOMIC WASTE.

"The Passing of the Detail Man," which appeared in the advertiser's column of the CALIFORNIA STATE JOURNAL OF MEDICINE, March 1915, deals with but one phase of the situation—the physician's viewpoint. The criticisms offered naturally have come from the manufacturer and his agent. The manufacturer and his agent, however, must soon awaken to the fact that the conditions which made the detail man a profitable propagandist are now radically changed. The advancement of educational standards; the continual exposure of proprietary and medical frauds; keen competition, and the general disposition to discredit commercial exponents of therapeutic virtues, all tend to make the detail man's life a burden. This is particularly the case in our large cities.

In order to gain an audience the detail man must have some excuse for calling. He cannot with propriety assume to take up the physician's time without something compensatory in his visit. The manufacturer is well aware of this and he is constantly devising "something new" to aid the

detail man in his rounds. The offering of samples has lost its advertising value. The busy practitioner no longer bothers with these, nor does he pass them on to his patient. He knows that this little trick encourages self-medication and builds business for the proprietary interests. The leaving of "literature" is also becoming obsolete—this is accomplished at less expense by medium of the mails. The "friendship" dodge of taking the doctor out to dinner or to the races is rather too costly for universal adoption. Getting "solid" with the doctor's office nurse has been worked with success but it takes ingenuity and time to warm up "the cold shoulder."

About the only worth-while thing that counts these days is the man of exceptional quality who is—first of all—a gentleman; who is backed by a house of unquestioned integrity; who knows his line from alpha to omega. Such a man, however, is a luxury for the manufacturer to maintain in the field. He cannot possibly pay as a yielder of direct returns.

In the larger centers the physician can be seen but a few hours during the afternoon. At best the detail man can make but two or three worth-while interviews. He may make five or six "pseudo" interviews, or maybe a dozen "fake" interviews. Pseudo interviews and fake interviews, however, belong only to the cheap man who is capper for a cheap house. It is this mendicant class that leaves samples and trash in your reception room and who slinks away and reports you as "visited."

The worth-while detail man can make only a very few calls per day and he costs his house anywhere from ten to fifteen dollars per day. Now, what can this worth-while interview consist of? It consists in the majority of cases, of just a good-fellowship exchange of courtesies. Frequently there is no mention whatever of business. The whole procedure is to *promote cordial relations* between "the house" and its good friend—the physician. This, in truth, is the legitimate field of the detail man. It typifies the detail man of the future if not of the present. The sooner the manufacturer finds this out the better it will be for all concerned.

AMERICAN MEDICAL ASSOCIATION

Meets

in San Francisco

June 22, 23, 24, 25, 1915

ORIGINAL ARTICLES

MORPHINE-SCOPOLAMINE ANESTHESIA IN OBSTETRICS.*

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I have been requested to prepare a paper on this subject by several members of the Society who are aware of the fact that I am working with these drugs, employing the technic advocated by Gauss and Kronig of Freiburg. At the present time I am not in a position to advance any fast and fixed conclusions as my cases are all too few, numbering but fourteen, but I have received enough encouragement to impel me to continue the work, and I shall reserve a final judgment until I can quote from results in one hundred cases.

THE IMPORTANCE OF THE SUBJECT.

Anesthesia in obstetrics is in itself quite a problem for the reason that we must consider its effects both on the mother and the child. We all recognize the need for some form of narcosis. New departures in other branches of medicine and surgery are fast becoming familiar to the public. The propaganda for education of the laity is now busying itself with obstetrics so that pressure is being brought to bear on the obstetrician at the present time, the great demand being for relief from the fears and agonies of childbirth. The obstetrician recognizes only too truly the fact that the woman of to-day who lives the modern life is experiencing more difficulty in bringing her young into the world. Not only does she suffer more intensely from nervous exhaustion, due to the fears and pains of childbirth, but as the result of this exhaustion she requires aid in the way of operative measures, especially forceps.

Chloroform, ether, or nitrous oxide cannot be given over any length of time and the question before us this evening is,—Can small non-poisonous doses of morphine-scopolamine be administered to the parturient woman over an extended period of time so as to allay her fears and relieve her suffering and exhaustion without doing appreciable harm to mother or child?

PREPARATIONS EMPLOYED.

But first a word as to the preparations employed. Morphine and its hypodermic use is familiar to all. Scopolamine, as I use it, is put up by the Hoffman-La Roche Chemical Works according to the method prescribed by Straub, and is designated as "Scopolamine Haltbar." The superiority of this preparation lies in the fact that it is a stable solution and carefully standardized. Narcophin is a proprietary preparation of narcotine,—morphine meconate,—and according to Kronig gives better results and is less toxic. It can be obtained in ampules ready for hypodermic use.

HISTORICAL SKETCH.

The employment of these drugs in obstetrics is nothing new. Von Steinbuckle in 1902 first recommended their use in obstetrics; he published the results in twenty of his cases. His caution in

*Read before the San Francisco County Medical Society, November 17, 1914.

the use of scopolamine in childbirth contrasts very favorably with the boldness with which it was used in surgery. Gauss in 1906 published his results in over six hundred cases. Credit is given him for developing the technic of "Dammer Schlaf," or "Twilight Sleep." Kronig in 1907-1908 elaborated and perfected the details and published his results in 1,500 cases. During all this time the controversy among obstetricians waxed warm. Zweiful, Beirute, and Newell reported favorably and recommended the treatment; Steffens and Hocheisen opposed its use, basing their views on results in three hundred cases. Leopold and Veit gave it up as dangerous. Hatcher in 1910 published his classical article reviewing the entire question, both as to its surgical and its obstetrical uses, paying particular attention to the pharmacology of the drugs. He cited the advantages and the disadvantages in the use of morphine-scopolamine as follows:

Advantages:—1. Memory of the event is lost. 2. Pain is decreased or abolished. 3. Hemorrhage is lessened.

Disadvantages:—1. Danger to the child, by producing asphyxia; in some cases, death. 2. Miscellaneous minor disadvantages, a. Labor is prolonged. b. Unsuitable for general practice. c. Patient needs watching and attention while under the treatment.

The impression I received from reviewing this article was that the drugs are too dangerous to be used and the results too difficult to attain on account of the complex technic with its minute details. The entire matter, therefore, was dropped until revived again by Kronig in November, 1913, at Chicago; his article was published in *Surgery, Gynecology, and Obstetrics,* for May, 1914.

It was at the beginning of August of this year that I began using this treatment experimentally. In spite of the above review of the literature I tried to approach the question with an unbiased and impartial mind. I wished to ascertain for myself whether there was any merit in what Kronig was advocating. I obtained the technic from Freiburg, sent for the solutions, and in a few weeks had several cases which afforded me the desired opportunity. Every effort was made to avoid the errors which are responsible for many of the bad results reported. These errors are as follows:

1. Most men in this country used a combination of the two drugs, morphine and scopolamine, not only for the initial dose but for the succeeding doses also.

2. Bad results were further due to excessive dosage and to the use of unstable and deteriorated preparations of the scopolamine.

3. The erroneous notion prevailed that the method aimed to abolish the suffering of labor, whereas it is intended only to prevent memory of the event.

I soon learned that the relief which the mother experiences is similar to that achieved by anocia association, or by narcosis in general surgical operations, and I employed the two factors so essential to success.

THE ESSENTIALS FOR SUCCESS.

1. Emotional and psychic disturbances prior to operation must be reduced to a minimum.

2. Pain and fright must be altogether absent at the time of operation, by the administration of a suitable anesthetic.

THE ADMINISTRATION OF THE TREATMENT.

With these essentials in mind, my technic begins in the ante-partum stage for then I allay the fears and build up the confidence of my patient, so that when labor actually begins her co-operation is already secured. During the first stage the room should present a cheerful appearance and be free from any association with the actual delivery by the absence of instruments, odorous solutions, and so on. Sensory disturbances in the way of noises, strong lights, etc., must also be positively eliminated.

With the onset of pains the diagnosis of labor is accurately established; the contractions of the uterus being determined by laying the hand on the fundus. The first injection consists of 0.03 gm. of narcophine combined with 0.00045 gm. of scopolamine. Three-quarters of an hour after the first a second injection consisting of 0.00045 gm. of scopolamine alone is given. Further dosage varies for each patient and depends entirely on the memory test. The minimum amount of scopolamine is used that will secure amnesia, or abolition of memory. This is very important, and Gauss insists that the success of the treatment stands or falls by the observance of this one test.

The average normal case requires from five to seven injections, and while in some cases it may only be necessary to give three, in others as many as twelve or fourteen may be needed. A complete record is kept and I have a regular chart on which is recorded the findings for each individual case. My nurse, whom I have specially trained for this treatment, attends to the chart work. A copy of this chart is appended.

MANAGEMENT OF LABOR.

The cases are conducted exactly the same as if no morphine-scopolamine had been administered. The examinations are made per rectum in order to avoid moving the patient into the delivery room where she would have to be cleansed with the solutions. A simple gauze sponge saturated with bichloride solution keeps the field clean.

COURSE OF LABOR.

The patient is drowsy and sleeps between her pains. When a pain occurs she feels it to some extent and will moan and often toss about, but rarely has to be restrained. Though semi-conscious she will in some cases respond to questions, somewhat tardily, will obey commands as to changing her position or when it comes time to bear down. The progress of labor must be carefully watched; the characteristic cry is absent which denotes descent or when the head strikes the pelvic floor. Any straining efforts as the head distends the vulva are controlled by a few whiffs of ether; this will also prevent the patient from awakening, for at this time the pain is more acute. The head

gradually escapes over the perineum, permitting more distention of the tissues.

As soon as the child is born the cord is quickly severed and the baby removed to another room. The Mother's face is kept covered, her ears are occluded so that in case she awakens she will neither see what is going on nor hear the cry of her child. She is made comfortable and usually her deep slumber continues. After a variable time she awakens with no remembrance of the labor or that she has already given birth to her child.

THE PUERPERIUM.

None of my patients developed any abnormality during the puerperium. They were encouraged to move about in bed, to turn frequently from side to side, and to avoid lying flat on the back; as a rule they were permitted to sit up in bed rather early. They were given massage and resistance exercises by the nurse. All this increased their general tone and when they got up they were free from the usual weakness that accompanies the first attempts to leave their bed. The lying-in period is not cut short and they remained in bed the usual ten days.

THE EFFECT ON THE MOTHER.

Eight of my cases were primiparæ and all of the entire fourteen were in good physical condition. Nine were entirely successful, three partially successful, and two were failures. Or, in round numbers, the results may be classified as 14 per cent. unsuccessful, 21 per cent. partially successful, and 64 per cent. successful. Kronig claims complete amnesia covering the duration of labor in 80 per cent. of his cases, and Harrar of the New York Lying-in Hospital secured complete amnesia in 66 per cent., partial amnesia and hazy recollection with distinct alleviation of suffering in 10 per cent., with 20 per cent. not responding at all to the drug. Rongy of New York obtained the following results: 83.2 per cent. in which there was complete amnesia with analgesia; 7.2 per cent. in which there was analgesia without amnesia, and 9.6 per cent. in which the treatment failed to produce the effects desired. Of my two failures, one was due to the fact that the treatment was not begun until the end of the first stage of labor and I did not have sufficient time to put the patient completely under. In the other the patient was highly neurotic and the drugs, instead of acting as a sedative, and producing sleep, only excited the patient and caused delirium, necessitating the abandonment of the treatment.

THE EFFECT ON THE CHILD.

There were no fetal deaths. Seven of the babies cried spontaneously at birth. Three were drowsy; they were kept warm and no artificial method of resuscitation was employed. Within five or ten minutes they were breathing normally and the heart action was good. Two were asphyxiated. One case was resuscitated within five minutes; the other required artificial respiration and continuous action on my part for fifteen minutes before I was satisfied that all was well. The history of the labor in this case is interesting. The patient was a primipara; the diagnosis at the outset of labor was R. O. P. with early rupture of the membranes. The pains were at first irregular and weak, but later of a nagging character. The patient did not dilate properly until after she had been in labor for twelve hours, when her pains were coming every six or seven minutes, lasting half a minute. She was then given her first injection. All in all she was under the influence of the drugs for fourteen hours, receiving ten injections. After waiting three hours in the second stage of labor with no advancing head, mid high forceps were applied, and the Scanzoni technic, under ether anesthesia, was used to deliver the child. Whether the forceps, the ether, the prolonged labor, or the use of the morphine-scopolamine, was responsible for the asphyxia it is impossible for me to state.

THE DURATION OF THE LABOR.

The average time for the primaparæ was eighteen hours, computed from the patient's statement as to when she first experienced pains. This is rather a crude method, but the best we have at present. The average length of time while under the influence of the drugs was ten hours; during this period seven or eight injections would be given. The average time of labor for the multiparæ was fourteen hours, with seven hours under the influence of the treatment, and receiving five or six injections.

There were three forceps cases. One a mid-high forceps application and two of low forceps, the indication for the use of instruments being the head on the perineum for twenty minutes with no advance. Harrar and Rongy have remarked the tendency for the presenting part to

Morphine-Scopolamine Chart.*

Hospital..... Case No.....
Name..... Date.....

Hour										
Drug, amount, maker,										
Dilatation of cervix, vaginal, rectal,										
Membranes,										
Uterine contractions, frequency, length, strength, onset 2d stage, pains										
Subjective symptoms, fatigue, thirst, nausea, pain, sacral, abdominal, perineal,										
Objective symptoms, sleep between pains, during pains, flushing, vomiting, twitching of hands, outcry, mental confusion, delirium,										
Memory of objects, retained, lost.										
Fœtal heart,										
Maternal pulse, respiration, temperature,										

Delivery method, anesthetic.....
Condition of baby at birth.....
Perineum
Hemorrhage.....

* As devised by Harrar and McPherson and used in New York Lying-in Hospital, N. Y.

fail to advance when it reaches the outlet. In the future pituiterin will be given in order to avoid the use of forceps.

I have not cited my results for the purpose of drawing conclusions, but with the hope that I may precipitate discussion. Those who advocate or who condemn this treatment should base their decisions on actual experience. Opinions or statistics gathered from the various parts of the world, from men whose reputations we can vouch for and whose experiences are not limited to a few cases, can throw much light on this question. From my own results I feel justified in continuing to administer this treatment to any of my patients who are in good physical condition and who will co-operate with me.

Discussion.

W. F. B. Wakefield: Mr. Chairman, ladies and gentlemen: Being a very poor speaker and being very much interested in this subject, I have taken the liberty of writing out my discussion. This has been made possible by Dr. Breitstein's courtesy in sending me a copy of his paper.

I think Dr. Breitstein has brought before this society one of the most important subjects that has ever been discussed here and I contgratulate him on the masterly way he has introduced the subject.

I have been practicing the scopolamine treatment of labor with very great care and very great scientific interest. I have used it now in twenty-eight cases. Like Dr. Breitstein, I have a hesitancy, in view of the great amount of professional prejudice that seems to exist against the treatment, in discussing the subject without a greater wealth of material. I feel, however, that what I can do in twenty-eight cases, I can do in a hundred or any other number. In these cases I have not had a single failure. In some of them the results have been relatively more perfect than in others, but in all of them the results have been perfectly satisfactory, both to me and to the patient. Seventy-five to eighty per cent. of them have carried away from their labor no recollection of any kind; the other 20 to 25 per cent. have carried away some dim recollection of one kind or another, but no recollection of pain.

I think this treatment should be called the "scopolamine treatment" and not the "morphine-scopolamine treatment." There seems to be a very large number of doctors, unfamiliar with the Freiburg technic, who imagine that the treatmen I am employing and that Dr. Breitstein is employing is identical with the treatment which we all tried twelve years ago when using an old proprietary tablet. The seminarcosis, produced at the beginning of and carried out through the entire labor, is a pure scopolamine narcosis and does not depend, in any way, on morphine for its production. Owing, however, to the fact that it is not until after the second dose of scopolamine that the patient passes into this semi-conscious condition, it is expedient to give a small dose of morphine or narcotine with the first dose of scopolamine in order to control the severity of the pains for an hour. Personally, I have always used 1/6 of a grain of morphine and have had no experience with the narcotine. Also I have used entirely in my work fresh solutions of scopolamine made from the crystalline drug instead of the scopolamine haltbar preparation used by Dr. Breitstein. In the light of my experience to date, I would no more consider conducting a labor without the aid of scopolamine than I would consider performing a surgical operation without the aid of an anesthetic.

The type of women with whom my practice brings me in contact are very badly fitted both by education and environments to stand the physical sufferings of labor. I frankly admit that to carry a highstrung, nervous woman through a long labor and have her emerge from it with no recollections is a difficult feat to accomplish. All in all, I have found this treatment one of the most difficult things to put through successfully that I have ever tried. It is easy enough to get the patient into this condition of seminarcosis but to hold her there hour after hour, in the face of the ever increasing severity of the pains, is no easy matter and requires a great amount of good judgment and experience. One must be able to appreciate with unerring accuracy the exact time at which the brain is soon going to apperceive unless headed off by a fresh dose of scopolamine. Here is where Kronig and Gauss employ their memory tests, which I consider very detrimental to the success of the treatment. These men are constantly waking their patients up to find out if they are satisfactorily asleep. By their interrogations, they are constantly urging the brain to apperceive when the whole success of the treatment depends on keeping it from so doing. My assistants and I have found out that the less we address these patients the most successful is the outcome of our treatment. Beyond asking a patient to change her position or something of that kind, we make it a rule never to speak to the patients at all. Sometimes patients are inclined to be garrulous under this treatment and will ask questions and at first we used to answer them, now we never do. For instance, I had one patient recently under treatment and the membranes ruptured with an unusually explosive gush of water. The patient momentarily perceived the happening and inquired about it. I foolishly told her that the membranes had just ruptured. Afterwards she said that the only thing she remembered was when the membranes ruptured. Had I not called this fact distinctly to her brain by replying to her question she would have had no recollection of it at all. Those experienced in the use of scopolamine will soon learn from the patient's expression, the things she says, the things she does, to appreciate the time at which it is expedient to give another dose. When the head can be seen at the perineum, I add to my scopolamine a few whiffs of chloroform with each pain. I think that, if the scopolamine has taken care of the labor from the beginning of the first stage to the time when the head is distending the vulva, it has done all that ought to be expected of it.

I have personally watched very carefully the effect of the scopolamine on both mother and child and I am thoroughly convinced that, beyond producing this state of amnesia in the mother, it has no effect on either. If scopolamine increases at all the duration of labor, it does so to only a very slight degree. I have not been able to satisfy myself that it does so at all, unless the patient is overdosed. The pains continue just as regularly and efficiently under scopolamine as without it so far as I can see. In primipara, after several hours of labor, with the cervix dilated, the head on the deep muscles, I sometimes find that the uterine contractions are inefficient to produce satisfactory dilatation of the outlet. I had this same trouble in, I think, quite as large a percentage of cases before I used scopolamine. In these cases a dose of pituitrin overcomes the difficulty.

Referring to the two failures that Dr. Breitstein claims. In the first case, I should not have used the scopolamine at all but would have contented myself with the intermittent use of chloroform. Scopolamine is essentially intended to take care of the first stage of labor and, I think, has no application in cases such as Dr. Breitstein's first case.

I do not think that there is any more asphyxia-

tion of the children under this treatment than under any other and I do not believe that the asphyxiation has anything, whatever, to do with the use of scopolamine for I have time and time again carried a patient through an eighteen or twenty-hour labor and had the child cry lustily the moment it was born. All of us have a certain percentage of cases where the children do not cry immediately at birth and where we have to slap them or splash a little cold water on them or do something to start respiratory function and I do not think that I have any larger percentage of these cases under scopolamine treatment than I had before.

Since I have been using the scopolamine treatment in my obstetrical work, I have lost two babies. I am especially sorry for this fact because very likely those who are disposed to criticize will use this fact as an argument against the use of scopolamine. As a matter of fact, I am quite sure that these two babies would have been stillborn under any circumstances. In the one case, the mother had been a chronic invalid for years and was scarcely able to walk a city block at the time she went into labor. The child was undeveloped and had a very feeble heart action and I sent for the woman's husband a week before labor set in and told him that I thought it extremely unlikely that the child had enough vitality to withstand the ordinary strain of labor for such had been my experience in similar cases in the past.

In the other case, I noted that, while the child's heart had remained perfectly strong and regular up to the time of full dilatation of the cervix, as soon as the head commenced to advance, the child's heart became very feeble. Realizing that some unusual condition was present, I applied forceps and effected a hasty delivery. When the head was born it was seen that I had to deal with an unusually short cord twisted around the child's neck; the cord had to be cut before delivery of the body could be effected. I think in this case as soon as the head commenced its forward advance sufficient traction was made on the cord to shut off the circulation.

To me the most remarkable thing that I have noticed in connection with this treatment is the absolute absence of nerve exhaustion following labor. Unlike Dr. Breitstein, I have been getting my patients up early. Unless there is some special reason to the contrary, such as deep injury to the structures of the pelvic floor, my patients all sit up the day following the birth of the child. They feel like doing so, and I let them. The second morning most of them walk into the bathroom, are given a tub bath and return to bed feeling very much refreshed. From this time on they progress just as fast as their own feelings prompt them to do, all of them being cautioned not to do anything that tires them. Most of the patients go home from the hospital at the end of a week feeling just as strong and muscularly capable as they did at the end of three or four weeks under the old regime. Furthermore, I have carefully examined all these women three or four weeks after labor, as I have always made a habit of doing in my obstetrical work, and I find that this early rising does not in any way interfere with satisfactory involution of both the uterus and the muscular structures generally; in fact, the general pelvic condition is better four weeks after labor when they get up early than when they do not.

Williams has stated, and my experience confirms this statement, that from 25 to 35 per cent. of the cases that he examines four or five weeks after labor have a retroverted uterus. This occurs much less frequently in the patient who gets up early and has occurred only twice, I think, in my twenty-eight cases. Patients lying in bed are on their backs nine-tenths of the time and if the uterus involutes quicker than its ligaments, as soon as it has contracted sufficiently to clear the promontory of the sacrum, lying in bed favors its backward displacement. When no reason exists to the contrary and women are spared the nerve exhaustion that follows labor under ordinary conditions, there is nothing gained by keeping them in bed. Quite the contrary.

Anyone trying this treatment will very soon discover that it can only be successfully applied under very ideal conditions. In the first place, the treatment should be carried out in a delivery room so situated that the patient can be protected from light, noise or confusion of any kind because any confusion in or about the delivery room will so seriously disturb the effect of this treatment as to very materially interfere with its efficiency. Furthermore, there should be constantly in attendance on the semi-conscious patient one or two nurses who thoroughly understand the technic of this treatment and who are entirely in sympathy with it and no one else except the supervising accoucheur should go in or out of the room. Loud talking or noise of any kind should also be interdicted within hearing distance of the room if one wishes to make this treatment entirely successful. The man on whom the responsibility of this treatment rests should be within calling distance during the entire time that his patient is in labor. It can readily be seen from this statement of facts that it is not a treatment which will lend itself to general use. Only those, I think, will be able to satisfactorily use this treatment who are willing to make the necessary sacrifice of time and surround themselves by the conditions that are essential for its success.

Dr. B. F. Sandow: I should like to make a few remarks in regard to the scopolamine narcophine treatment for the alleviation of pain in childbirth, based upon personal observations at Freiburg and Munich.

The treatment is given to every patient applying for admission to the maternity, private patients having separate rooms, while indigents and others paying little are confined in wards containing several beds.

The treatment set forth by Dr. Breitstein is in the main identical with that followed at Freiburg and Munich. The initial dose of Straub's mannit-scopolamin is 1½ c.c.m. (0.00045 scopolamin) combined with 1 c.c.m. (0.03) of narcophine, followed in three-quarters of an hour by 1½ c.c.m. of scopolamine only; three-quarters of an hour after this second dose another combined dose of scopolamine and narcophine is given, but of diminished dosage. Thereafter these smaller doses are repeated at intervals of one and one-half hours, every third dose of scopolamine being combined with narcophine.

On an average four to five injections are ample to see the patient through, but often more doses are required to produce the desired amnesia.

As a basis for the beginning of the treatment, two points are observed: regularity of labor pains and a beginning dilatation of the os.

Four to five cases, on an average, are treated daily at Freiburg, while at Munich as many as ten daily are received. A routine treatment has been established for all cases and the injections are made by a competent head nurse, the physician in charge being called only when untoward symptoms occur and when the baby is about to be born. This will prove to you that the dangers incident to the treatment are considered negligible.

My conclusions, based upon the observation and attendance upon 90 cases in Freiburg and Munich, are: That the danger to the mothers is nil. That the babies are frequently born in an oligopneac condition, presenting a bluish appearance; that this subsides within five or ten minutes in most cases, leaving the baby in perfectly normal condition. That there is apnea in some cases necessitating efforts at resuscitation. That the total mortality from all causes is 3 per cent.

In regard to the environment of the lying-in, ef-

forts are made for absolute quiet in private wards, while in the general wards (where often four or five are simultaneously in labor) the maintenance of quiet is often difficult—and yet, even in these latter cases the results have been quite satisfactory.

Women from all parts of the world appear in Freiburg for the treatment, and quite a few I noted to be from the eastern part of the United States.

To conclude, I was profoundly impressed with what I saw in Freiburg and Munich, and I believe that the treatment, properly carried out, is a boon to parturient women.

Dr. W. E. Libby: In the University Hospital we have had experience with 20 cases. Of the 20, 10 have been primiparae and 10 multiparae. Our technic is that followed at Freiburg, and while I do not want to draw any conclusions, I should like to give you a few impressions received from these 20 cases.

Of these cases, 16 have been successful as far as the mother is concerned. Two were unsuccessful, although one of the cases received 12 doses, and two others were only partially successful.

From this series of cases I will make three observations: First, the effect upon the mother, where the anesthesia has worked has been a complete success. She knew nothing that happened after the second injection; and, even though we have made several examinations and have moved the patient from one room to another, she has known nothing about the labor. The baby is not removed from the room and we do whatever repair is necessary without anesthesia.

Second, the effect upon the child: here I have to disagree with Dr. Wakefield. We have had only one death, and autopsy showed that it was due to a congenital heart lesion. In one case I worked about one-half hour with the child before it was all right, and now, in every case when I see the head coming, I have hot and cold water prepared in case resuscitation of the child is necessary. This asphyxiation is, however, only temporary and in from 10 to 15 minutes the child is in a normal condition.

Third, the effect upon labor: I am satisfied, just from these few cases, that the labor is prolonged, that the pains are in some cases irregular and infrequent. The first stage is slow and in the second stage the pains do not seem as strong, and I think in the long run this will necessitate more frequent instrumental deliveries. In several of these cases the mother has been excited, and though I told her to push and bear down she would not do it. She would become more irritable and excitable and thrash about in bed. In these cases I have given pituitrin, but the patients would do no better.

From these few cases, I can say that as far as the mother is concerned, the anesthesia is without danger. As far as the baby is concerned, it may not be so free from danger; however, the fetal asphyxiation is only temporary. As far as the labor is concerned, it may be prolonged and instrumental delivery may be required more often.

A. Newman: I would like to ask Dr. Breitstein and Dr. Wakefield whether they have noticed any effect on the secretion of milk afterwards?

L. I. Breitstein, closing discussion: I want to say that morphin-scopolamin is like any other anesthetic in this respect—that is, it is not fool-proof. You have to watch it, and the safety with which it is administered depends upon the one who administers it. If you have an especially trained anesthetist, the results are better.

About waking the patient up to give her a sleeping potion, that is not exactly the thing we do. If the patient is asleep she is not disturbed, but if she awakens or comes out of her semi-unconscious condition, that is the time we interrogate her. I believe this memory test is the test we should adhere to. If you give too much narcotic you bring about muscular relaxation, and that is apt to prove dangerous because it produces atonic hemorrhage. If you give too little she will remember, and the treatment is for naught. You have to get between the two, and that you can only do, I believe, by the memory test.

As to contra-indications, the patient should be examined from four to six weeks before she goes into labor and measurements made. If there is any disproportion between the size of the mother's pelvis and the size of the baby's head, this treatment is not suited for this particular case. Again, it should not be instituted when labor is far advanced, as in the second stage.

About keeping the patients in bed or getting them up early, I am inclined to be a little conservative. I do not get my patients up early. I prefer to keep them in bed ten days.

As to the size of the dose of scopolamine used, Kronig in his paper, read at the meeting in Chicago, November, 1913, said that after working on five thousand cases he has formed a schedule which he uses for the general run of women in good physical condition. That is the schedule I follow. In the first two injections, the dose of scopolamine is 0.00045 gm. or 1/150 gr. The dose of the third injection and those used subsequently consists of 0.00015 gm. or 1/450 gr. scopolamine. If Dr. Wakefield would total up the amount of scopolamine used, he would find that I employ the same amount if not less scopolamine than he uses.

In reply to Dr. Newman's question, I will say that scopolamine has a tendency to dry up secretions just like atropine. The breast secretion contains traces of scopolamine, and for that reason I do not put the babies to the breast for the first twelve hours. A breast pump is used. The milk supply is rarely diminished; however, I will state that the tendency to engorgement of the breasts generally seen about the third day is noticeably diminished.

A POSSIBLE EXPLANATION OF THE CONFLICTING REPORTS ON TWILIGHT SLEEP.*

By STELLA LEHR, M. D., Berkeley.

A number of physicians have expressed opposing views on the "twilight sleep." My observations in Freiburg and subsequent experience in New York have convinced me of the necessity of an explanation. My personal experience afforded me a satisfactory explanation, and I offer it to you for your consideration.

It is very simple. There are two methods of giving the twilight sleep—diametrically opposed in principle.

First: The original Gauss-Krönig method, having for its keynote individualization of dosage; the drugs administered in the smallest possible amount to meet the varying susceptibility of the patient; morphine and scopolamin being used; morphine given only with the first dose.

Second: The Siegel method, having for its keynote standardization; the drugs administered in stated doses at regular intervals disregarding the

* Read before the Alameda County Medical Association, January, 1915.

susceptibility of the patient; narcophine substituted for morphine, and repeated with every third dose.

The latter method is based upon the results of Gauss' experience in working out the first method; theoretically it does not appear very different, as the total amount of drugs and the average length of labor were taken into account in making out the methodically repeated dosage, which is the distinguishing feature of the Siegel method. Its practical application does not work out so well, as the report of my cases will show.

In Freiburg the original twilight sleep was given only in the first-class wards and therefore not available for clinical purposes. In the third and fourth class wards the Siegel method was used and this was what the visiting physician saw. The unfortunate circumstance was that the observer was not informed that she was witnessing a method on trial, and not an approved and accepted one, as so many physicians have concluded.

My experience was a case in point. I was in Freiburg five days before I realized that what I was seeing every day in the third and fourth wards did not represent the latest approved method. From my previous reading I had received the impression that the injections were given to meet the susceptibility of the patient and her reaction judged by the memory test and various reflexes.

The first day I visited the ward, there were three cases in progress, and while I observed all three I concentrated my attention upon one. The first dose was given when contractions were strong, regular, and five minutes apart, and in ten minutes the patient was asleep, waking only at the climax of the pain. I watched in vain for any test of the patient's condition and indications for further dosage. What I did observe was that the drugs were repeated methodically and soon the patient was snoring—in a very deep sleep. Upon inquiry I was told that as long as the patient could be aroused, there was no danger. Later on two injections of pituitrin were used, and at the final stage inhalations of ethyl chloride were given. The baby was pinkish lavender in color and did not breathe for about ten minutes. During that time various means of resuscitation were used: the baby was suspended by the feet, and body vigorously slapped, then laid on a table, and chest rhythmically pounded; then body immersed alternately in hot and cold water, and finally intratracheal catheterization used. After witnessing this I naturally concluded that the twilight sleep was to be used very conservatively or better still not at all.

After five days I learned through American mothers whom I met socially that this method was only an experiment and did not represent the original painstakingly worked out Gauss-Krönig method. During these first few days the results seen in five cases were not favorable and a number of American physicians had come and gone carrying with them this unfavorable impression. During the succeeding five days, four cases were seen in which the babies were in perfect condition and cried immediately after birth; in two other cases, respiration was only slightly delayed.

These varied results, suggested the necessity of individual dosage. It seemed unjust both to the original treatment and the visiting physicians to receive such misinformation. When, in an interview with Professor Krönig, I told him of my experience, and the fact that a number of physicians had come and gone uninformed of the truth, he was perturbed and said, "That should not be." He also said that the Siegel method was not an improvement on the original, but an attempt to overcome the necessity for the constant watchfulness which made the original method almost impracticable for the general practitioner. Siegel himself states in his report that it is an attempt to simplify the method but he does not recommend it in private practice. Dr. Krönig said they were entirely satisfied with the original method and considered it perfected. He also promised to remedy the condition with regard to visitors; that was only a few days before the war, which, of course, put an end to clinics.

I was amazed upon reaching New York to realize the extent of the misconception regarding the two methods. Out of seven hospitals using the twilight sleep, only two were using the correct Gauss-Krönig method. These were the Long Island College Hospital under Dr. Polak and the Gouverneur Hospital in New York under Dr. Knipe. Both of these men were in Freiburg this summer and met Dr. Krönig personally. The other five hospitals were using narcophine, and some followed the Siegel scheme; most have since adopted the original.

During a period of six weeks I observed the work of the Gouverneur Hospital and my disapproval and conservative attitude was entirely changed. The results were most satisfactory and I shall state my observations as concisely as possible. The Gauss-Krönig method was strictly adhered to. The patients were placed in a quiet darkened room, eyes bandaged and cotton in ears. The first injection was not given until it was certain that labor was in progress. Each patient seemed to have an individual reaction and close observation of the effect of the first dose gave a hint as to subsequent dosage.

The signs to be watched for, are flushing of the face, thirst, sleep (how soon apparent and how deep). If these signs are marked *soon* after the first dose it may be assumed that the patient is susceptible. The effect upon pain sensation is to diminish it, of course, but in addition to this all anticipation of pain is removed. The mother sleeps between the contractions, awakens only at the climax, and is asleep again almost before it is over. This effect gives the observer the impression of a lengthened interval between pains. True observation can only be made by keeping the hand upon the abdomen, where the contraction may be felt from the very beginning to the end. If the interval should really be lengthened, it is another sign of a susceptible patient. It is gauging this "specific susceptibility" that gives the cue for subsequent dosage, and constant observation is necessary to success. After the first dose has had effect, the memory test is applied and repeated at inter-

vals of forty-five minutes. Experience gives such familiarity that the memory test may be used infrequently, but it is indispensable to the beginner. It is best to make this test as inconspicuous as possible, and asking how many injections have been given is usually sufficient. Most women remember only three, for it is about the third dose that amnesia is evidenced. In a properly administered dosage there is no diminution in the force of the contraction, and dilation goes on more rapidly than normally. Mothers who have received this treatment say they remember only two or three pains after the first injection, and the intensity of these gradually decrease. This shows that analgesia is obtained quite early.

Many physicians have asked wherein this treatment has any advantage over chloroform, ether or nitrous oxide. The answer is here—it is a FIRST STAGE HELPER, and here it practically stands alone.

The second stage is lengthened—I think all agree upon that point; and if there is a disadvantage at all, it is here, for in many cases it does away with that voluntary effort which the fully conscious patient would exercise. In most observed cases, no demand was made upon the patient in order to avoid arousing her. The latter part of the labor was prolonged and if pituitrin seemed indicated was administered, but occasionally low forceps were used to lift the head out of the vagina as it were.

In Freiburg I noticed a very definite correlation between poor abdominal pressure and the necessity for the use of pituitrin. I also noticed that when pituitrin was used, forceps were usually necessary to complete the delivery.

As a large percentage of the women of Baden have contracted pelves, it is difficult to determine whether the necessity for forceps was due to this fact, or to the action of the drugs used according to the Siegel scheme to produce the twilight sleep.

Dr. Sears of Boston, who visited Dr. Knipe's ward, suggested that a firm but adjustable abdominal bandage would be of service in affording the pressure and resistance which relaxed abdominal muscles failed to give. He reported having used it for years and considered it avoided the necessity for pituitrin. The bandage should be used as carefully as pituitrin and only after dilatation is complete. During the birth of the head a general anesthetic should be used, as the twilight sleep is too light to be undisturbed by the final expulsive pains as well as the additional light and bustle attendant upon the birth.

The third stage, or the expulsion of the placenta, usually ends normally. It is important to avoid premature manipulation of the uterus and only light abdominal palpation should be used to keep informed of the condition of the parts. Only in cases of hemorrhage or prolonged retention of the placenta should the Credé manipulation be used. A routine hypodermic of ergotol is used in the Gouverneur Hospital.

The after treatment as given in Freiburg is not a necessary part of the twilight sleep. The absence of exhaustion led to the adoption of early rising, but it must be remembered that the patient is prepared for it by a system of exercises instituted eight or twelve hours after labor. The uterus is usually below the pelvic brim by the fifth or sixth day. In the first-class wards a system of hydrotherapy is instituted about the tenth day, consisting of sprays of various degrees of temperature and force used upon the abdomen. The exercises and early rising are being tentatively tried out at the Gouverneur Hospital. The patients are advised to return for examination over a considerable period of time, and reports show no unfavorable results. It is realized, however, that a long period must elapse to judge of the final result.

The children as seen at this hospital showed no ill effects of the twilight sleep, and except for two or three which had the cord about the neck, they all cried immediately.

The effect upon the child is watched by auscultation of the heart every 15 minutes. If the drug is given too rapidly for the mother to eliminate, or too near the birth, the infant suffers from a cumulative effect which is evidenced by changes in the foetal-pulse rate and at birth by depression of the respiration evidenced by postponement or enfeeblement of the initial inspiratory movement. My observation has convinced me that this can be avoided by carefully regulated dosage. Gauss considers the condition of the child a criterion of the proper administration of the drugs. All the cases seen at the Gouverneur Hospital gave perfect results as to the child, thus proving the safety of "Individualization of dosage."

So much in explanation of the opposing views of those who have visited the Freiburg Clinic during the last year. There are another group of physicians who dismiss the subject of twilight sleep with the remark, "We tried it years ago and discarded it as dangerous." Gauss himself explains those early failures as due to several factors.

The first and very important one was the inability to get a stable preparation of the drug. That now has been overcome.

Second—Failure to study the individual patient in administering the drug.

Third—Attempting to force the condition in too short a time, causing a relative overdosing.

Fourth—Beginning the injections too early—before it was determined that the pains were those of true labor and not the false pains present in uterine inertia, which is the greatest contraindication to treatment.

Fifth—Attempting to do away with all evidence of pain—which means saturating infant with the narcotic drug—and thus jeopardizing the infant's life.

Gauss' report of the second 500 cases shows a great improvement in all ways over the first 500 cases—when he was studying the action of the drugs—alone and together and working out the memory test. Instead of giving it up as dangerous, he eliminated the danger by constant experimentation and observation, and those who have read the literature giving the details of his painstaking work, and have seen well-conducted cases adhering closely to his method, cannot help but agree

with Dr. Krönig that it is an efficient method of eliminating the fear and pain of parturition.

Preparation of the Drugs. Scopolamin hydrobromide is derived from the scopolo plant; hyoscine hydrobromide from hyoscyamus. Both belong to the same genus and as chemists can find no difference, they are considered identical. Scopolamin may be used in fresh solution, or be preserved in a ten per cent. solution of mannit-alcohol according to Straub's formula. If ampuled to be kept for any length of time, Jena glass should be used, as there is some chemical reaction between the solution and the lead in flint glass.

Test of Solution. Kessel has shown that one drop of a weak solution of potassium permanganate is a delicate test for apoatropin, one of the dangerous decomposition products. It gives a brownish yellow color when present.

Strength of Solution:

Scopolamin 1 cc—0.0003 gms. (1/200 gr.)
Morphine 1 cc—0.01 gms. (1/6 gr.)
Narcophine 1 cc—0.03 gms. (½ gr.). Substituted for morphine in the Siegel method.

Narcophine is claimed to be less depressant to the respiratory function of the child, and to have other advantages over morphine. The Council on Pharmacy and Chemistry was unable to accept the therapeutic claims for it. *(Journal A. M. A.,* Nov. 21, 1914.)

Dosage. The first dose in scopolamin-morphine-amnesia is:

Scopolamin hydrobromide 0.003 (1/200 gr.)—0.00045 gm. (1/133 gr.) and
Morphine hydrochloride 0.01 gm. (1/6 gr.)

Scopolamin is repeated as necessary, the second dose usually in about three-fourths hour, but it may be two hours, and the dose may be the same or less than the first. Subsequent doses are decreased about one-half, and the interval lengthened. The action of the morphine is comparable to that of nitrous oxide in a general ether anesthetic; it gets the patient under so that scopolamin may get in its work and accomplish "forgetfulness of present events." Gauss' early ill effects upon labor and upon the child were due to repeated doses of morphine. His advice is to allow generally two hours to elapse between the last injection and the probable time of birth. The average number of doses is five or six. Amnesia sets in about the third dose. There is a very small percentage of patients unaffected by the drugs. It is needless to say that the twilight sleep requires a high degree of obstetrical knowledge.

General Conclusion. The twilight sleep requires the same careful administration as any anesthetic. It should be given in a well-equipped hospital. It offers a means of alleviating the pains of labor, and if the dose is individually adjusted, is without danger to mother or child.

OBSERVATIONS ON THE DAMMERSCHLAF OR TWILIGHT SLEEP.*

By B. F. SANDOW, M. D., Oakland.

It is the imperative duty of the physician to relieve pain, whatever the indication and whatever the cause, and it is the obvious duty of the obstetrician to alleviate the pains of childbirth. This principle has been recognized from the earliest times, when our art was in its most primitive state, and attempts at pain mitigation and palliation have been made among the uncivilized and the aborigines.

This great problem of pain alleviation in the parturient woman is still confronting us today and many and various attempts have been made to meet it. Chloroform, ether, nitrous oxide, chloride of ethyl, morphine, scopolamin, heroin, antipyrin, alcohol, cocaine, spinal anesthesia, and other agencies have been employed to lessen the pain in labor. All these means afford relief in some measure, but to the employment of some well founded objections developed, while others proved to be ineffectual and abortive.

You are all more or less familiar with the "Dammerschlaf" or "Twilight Sleep," the scopolamin morphine treatment in childbirth. Its elaboration and employment for the relief of labor pains marks a distinct advance in obstetrical science. My aim in addressing you is to render a statement of my observations and my experience with this treatment in about ninety cases, while doing postgraduate work during the past year at Freiburg and München.

As early as 1902, Steinbüchel in Germany employed scopolamin and morphine in obstetrics for the relief of labor pains. He emphasized the superior advantages of it over all the heretofore known methods. Among his followers Krönig and Gauss in Freiburg in particular elaborated this treatment, and Gauss in 1906 published a record of his first 600 cases. When he and Krönig visited this country last year a further report of 3000 successful cases, from the Freiburg clinic, was submitted at the meeting of the American Gynecological Society in Chicago. Following Gauss' first report, many obstetricians in this country gave the method a trial, but soon bad results were reported by many and the treatment came into disrepute and was practically abandoned as dangerous, asphyxiation and death of infants as well as hemorrhage and prolongation of labor being claimed. According to Knipe, New York, in a recent paper read before the Section on Obstetrics in the New York Academy of Medicine, the reported bad results were due:

1. To poor preparations of scopolamin.
2. To the use of too much morphine.
3. To attempts to achieve absolute painlessness in childbirth.
4. To a technic which was entirely different from that used and recommended by Gauss.

I fully concur with Knipe and believe that with the adoption of and adherence to the Freiburg

* Read before the Alameda County Medical Association, February, 1915.

method very satisfactory results may be obtained. Obstetrical experience and judgment are requisite to ensure success, and it should be insisted upon that the treatment be carried out in a well-appointed maternity or hospital, though in some cases I see no reason why the twilight sleep should not be given in the house of the patient, provided the environment can be adjusted in a measure to that prevailing in a well ordered maternity.

I desire to emphasize the importance of employing a reliable and stable preparation of scopolamin; the usual preparations were found to be unstable in their physiological effects, as well as subject to an early decomposition.

Straub of Freiburg evolved the so-called mannit-scopolamin, a stable preparation, manufactured by Hoffmann-LaRoche. It is put up in ampules of 1.1 c.c. ready for use, and contains 1/200 of a grain of scopolamin. The use of morphine has likewise been largely abandoned in favor of narcophin, a meconate of morphine and narcotin, 3 grammes of which represent 1 gramme of morphine. Narcophin is said to be devoid of the depressing effects of morphine upon the infant, and is put up in ampules of 1 c.c. each containing ½ grain of narcophine. (It has not been accepted by the Council on Pharmacy and Chemistry.)

The technic and dosage are as follows: When the patient is beginning to have regular labor pains, and when they are beginning to become irksome; that is, when true labor is established, and the os is beginning to dilate, 1½ c.c. of the improved scopolamin, combined with 1 c.c. of narcophin are injected hypodermically, preferably into the thigh. The same dose of scopolamin is repeated in three-quarters of an hour, and after the same interval, another combined but diminished dose of scopolamin and narcophin is given, amounting to 1/3 of the doses of scopolamin previously given and of ½ of the dose of narcophin. Thereafter these small doses are repeated at one and one-half hourly intervals, every third dose of scopolamin being combined with narcophin.

This is based upon Siegel's routine treatment of 220 cases and was found to answer admirably in almost all cases. On an average, five or six doses are required to conclude labor under the twilight sleep in average and uncomplicated cases. In addition, and to insure perfect success, 10 c.c. of chloride of ethyl are given by inhalation at the moment of the birth of the head.

It is essential that perfect quiet be maintained, and that the patient be protected against strong light, since it was found that they are exquisitely sensitive to both light and noise.

To safeguard the infant in utero, frequent examinations are made of the fetal heart tones and if any alarming symptoms develop, prompt measures are taken and eventually labor is terminated by forceps.

As regards the memory test, advised by the Freiburg school, I found it no longer in use in the general wards at Freiburg and Munich, though it is employed by Krönig and Gauss in their private wards.

The cardinal point in the successful conduct of the Dämmerschlaf is the dosage. One must use judgment and acumen in applying the treatment. The social and physical status, possible idiosyncrasies of the patient, all must be considered. Women of the more cultured classes and those of the neurasthenic type are more susceptible to the drugs.

Gauss and Siegel maintain that there exist no counter-indications to the treatment, except primary uterine inertia. Precipitate labor precludes the employment of the treatment.

There can be no question raised concerning the great blessings this treatment offers to suffering parturient women. As to the dangers involved to mothers and infants, it is admitted that they are nil as regards the mother. With regard to the infant, they may be reduced to a minimum in the hands of a competent experienced accoucheur. The statistics offered at Freiburg and Munich show no higher mortality than elsewhere, where other methods of pain alleviation are still in vogue.

One great achievement alone is the rapid recovering of the mother. The absence of anxiety, excruciating pain and resulting nervous shock leaves the mother in much better physical and mental state at the end of labor. To more quickly restore muscular tone, a system of active movements, resembling the Swedish regime, are in vogue in Freiburg and are begun as early as the *second day after labor.* At Freiburg and Munich women are up and around, as a rule, on or after the fourth day. Conservative judgment and experience, however, will prompt us to insist upon a longer period of rest, say a week or longer.

I will formulate my observations as follows: The majority of the women receiving the twilight sleep gave birth without having any recollection of it, that is, amnesia was perfect. A few claimed to have felt pain at certain periods of labor, but no recollection was had of the birth of the child, and vice versa, the birth of the head was remembered only.

No case of absolute failure was observed. None of the mothers were at any time in danger or showed alarming symptoms. Excitement and hallucinations were noted in many instances. Facial hyperemia is common. Great thirst is invariably complained of as well as dryness of lips. More or less retardation of uterine contraction was noted and in some instances required from one to three hypodermic doses of pituitrin.

Prolongation of labor amounts, on an average, in primiparae to about one hour and a half, and in multiparae to about half an hour. Lacerations were few, and certainly less than when the patient is wide awake, in pain and hence restless. Forceps were used in about 8% of the cases. Hemorrhages due to atony were not observed. No disturbance of lactation was noted.

Most babies were born seemingly uninfluenced by the drugs, though in many instances presented a more or less bluish discoloration that appeared to be quite harmless and disappeared in from five to ten minutes.

Cases of slight apnea or oligopnea were noted frequently as well as a few cases of severe apnea,

requiring efforts at resuscitation. One infant was stillborn. One was deeply asphyxiated and could not be revived.

Concluding, I maintain that in conscientious paistaking hands of a trained obstetrician, and by adhering to a technic outlined in the foregoing and described as the Freiburg method, the danger incident to the use of scopolamin and morphine may be reduced to a minimum; that the "Twilight Sleep" in properly selected cases is of inestimable value and a wonderful agency for rendering childbirth humane.

THE SILVER IODIDE EMULSION IN PYELOGRAPHY.

By LEON JOSEPH ROTH, M. D., Los Angeles.

Recent surgical experiences and animal experiments have demonstrated that there exists an element of danger in the introduction of collargol solutions into the renal pelvis. The results of some of these injections have been of such serious nature that fatal issues have followed. Postoperative and post-mortem examinations of renal specimens have shown diffuse infiltration of the solution into the pyramids, and renal structure generally, with collections in the cortex and subcapsular region. This has produced infarcts and necroses. In some cases necropsies have demonstrated diffusion in the blood vessels and viscera.

I

It appears that the method of introduction either by syringe or gravity, has little or nothing to do with the infiltration. The penetrative power of collargol, highly lauded for this virtue in the treatment of specific urethritis, reasonably appears to be the noxious influence. Of possibly more than passing interest is the fact that renal hemorrhage is being considered a contra-indication to its use. The method of absorption is not perfectly understood; it seems logical, however, to suppose that once the solution has penetrated the pelvic tissue, or has entered the papillae, the diffusion is produced by the physical law or it immediately enters the venous stream, and is thus distributed into the kidney per se, or the kidney and the thoracic and abdominal viscera.

An article by Kelly and Lewis which appeared in the June 1913 number of *Surgery, Gynecology and Obstetrics,* contained a brief exposé of the iodide emulsion and two case reports. Other reports have since appeared and all have been commendatory. Briefly the emulsion is a suspension of the silver salt in mucilage of quince seed. It is standardized at 5%. In appearance it is of creamy white color, and viscid consistency. It is odorless and does not stain. In intensity it equals the X-ray resistance of collargol at 10%, and is minus all the objectionable features of the latter, including the cost. It is soluble in the urine.

In the cases thus far injected no pain has been produced, a very slight sensation of "fullness" is experienced and the radiograph taken at this instant. The thickness of the emulsion, and slowness of its oozing through the tip of the catheter probably prevents extreme dilation of the pelvis. It passes freely through a medium size catheter, number seven, for instance; if a smaller catheter is used the emulsion may be diluted without greatly diminishing its ray resistance. Dilution is especially suggested for injection of the larger hydro-

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nephroses. This is practical also in bladder work. Warming the substance in a water bath seems to slightly increase the fluidity, and makes the injection less noticeable to the patient. After the injection the emulsion is itself permitted to escape through the catheter for a varying time, and the catheter withdrawn either with or without thinning by a sterile aqueous solution. No ill effects have followed even if the catheter be removed within a short while after injection, though it is preferable

to wait a reasonable length of time to permit reduction of the pelvic contents.

The results have been perfectly satisfactory. One case went to operation the day following the injection, and no trace of the emulsion found.

III

The accompanying prints from reduced pyelographs (Dr. Wm. B. Bowman) of calculus in the inferior calyx I, of beginning hydronephrosis with a twisted and slightly dilated ureter II, of a cystotomized neoplastic bladder, with catheter in position III (2% emulsion) evidence the comparative value of the iodide.

CASE OF SYMPATHETIC OPHTHALMIA.*

By C. S. G. NAGEL, M. D., San Francisco.

Many of you are aware of two axiomatic facts *re* sympathetic ophthalmia: first, that it is absolutely preventable by early enucleation of the injured eye, and second, that sympathetic ophthalmia is practically always fatal to the affected eye. From the former fact has resulted a wholesome fear throughout the practising profession that in the brilliant Mauthner's words has led to the sacrifice of hecatombs of eyes. And though this in many instances has been quite unnecessary, yet since such eyes are generally badly damaged, their sacrifice is infinitely better than a possible loss of the second eye. Without a doubt this latter event is one of the most pathetic situations in practical medicine, spelling as it generally does, absolute blindness which could have been prevented.

Since from all said it fortunately follows that cases of sympathetic ophthalmia are not often seen, I opine the demonstration of such a case to be of general interest.

I will only briefly state the following from the history. This elderly man had been operated on for carcinoma of the tongue; some years after complained of left eye being painful. The possibility of metastasis has been considered, I understand (*re* which I may say in parenthesis that a priori that was not very likely—strange to say the majority of metastatic carcinomita of the eye—by the way, about 70 reported cases having originated from mammacarcinoma). Later on the diagnosis of primary glaucoma was established and a scleral trephining performed. Unfortunately an intraocular hemorrhage occurred subsequently and the eye remained troublesome. Enucleation was advised. When I first saw the patient some months ago, the eye was in a strongly inflamed condition from iridocyclitis. The chief practical result of my examination was the condition of the other eye. Numerous very small deposits on Descemet's membrane, the same as you see to-day, only much smaller; ciliary sensitiveness to touch and external lachrymation. Photophobia. Fundus not visible for details. Diagnosis, ophthalmia sympathica.

The conclusion was that enucleation of sympathizing eye (i. e., eye operated on for glaucoma) almostly surely would come too late. Such has proved to be the case;—after the usual (i. e., in "sympathetic irritation") striking prompt subsiding of the external symptoms of irritation after enucleation, the disease has gone on its fatal course in spite of continuous strong inunctions of mercurial ointment and prolonged administration of big doses of salicylate of sodium (after Widmack).

Discussion.

Dr. W. F. Blake: I want to say a word about this case, as during the course of the man's illness he passed through my hands. He came to me originally with the diagnosis of carcinoma of the eye, which diagnosis I was not able to confirm; but I did find, as Dr. Nagel has related, an attack of acute glaucoma, and the man was trephined to relieve the tension and the irritation. Perhaps a mistake was made in the first place by doing a trephine in this particular type of glaucoma—acute and not chronic. Possibly an iridectomy should have been the operation rather than trephining. At all events, the eye progressed badly after operation and I began to fear I had made a mistake and that there was carcinoma of the eye. The man had two minor accidents to his eye while I was looking after him, and various times we discussed the advisability of removing the eye to protect the other one. After the second accident he had a hemorrhage, the eye became acutely painful, and I insisted that he have it removed. He disappeared, and I was very glad to hear later that he was under Dr. Nagel's care. The eye was later removed, but evidently too late, as sympathetic ophthalmia had already set in.

This case illustrates strongly the danger of sympathetic ophthalmia in these slow-going chronic conditions where there is trouble in the ciliary body of one eye.

* Presented before San Francisco County Medical Society, March 9, 1915.

SOME EXPERIMENTAL DATA ON THE MORESTIN TREATMENT OF PERITONITIS.

By SAXTON POPE, M. D., San Francisco.

At the Societe de Chirurgie in May, 1913, Morestin read a report of two cases of peritonitis treated by the use of ether intra-abdominally. The work was done by Temoin at the Bichat Hospital, and the procedure consisted simply of sponging out the soiled peritoneal cavity with ether and leaving a quantity of this fluid in the abdomen. Morestin

had been using this treatment since 1901 and felt convinced of its usefulness.

Dr. Auvray reported a case of intestinal perforation in which, after cleansing the peritoneum and repairing the perforation, he poured a quart of ether in the abdominal cavity and closed his incision after sponging out the excess of ether. The patient made a splendid recovery.

On August 10, 1914, Dr. Edmond Delorme, Inspector-General of the Military Health Service, read a paper at the Academie des Sciences, in which he recommends this treatment in gunshot wounds of the abdomen. In none of these reports was experimental data put forth to prove the efficacy of the method. Deductions from a few clinical cases are proverbially fallacious. Because a human being may survive a surgical procedure does not prove that this procedure is good for him.

From a theoretical standpoint the use of a toxic irritant, such as ether, in the peritoneal cavity certainly does not seem rational. In the first place, ether is not an antiseptic to any appreciable extent. It is a tissue irritant, a solvent of fats and colloids, and definitely toxic. More than this, one would question the beneficial effect of distending the abdomen with gas of any sort in the presence of an infection.

To determine the value of this method experimentally, a series of twelve rabbits was used, two of which were controls. Eight were treated as follows: Under general anesthesia the animal was laparotomized, the colon drawn out, an inch incision made in the viscus, a portion of its contents smeared over the peritoneum. The intestinal wound was closed with silk, the peritoneum gently swabbed with sponges soaked in ether, a drachm of ether poured into the cavity, the colon returned, and the abdominal incision closed with silk.

When the ether comes in contact with the abdominal viscera, the animals experience pain, though previously anesthetized; later they seemed shocked and are profoundly narcotized. Kymographic records show a pronounced fall in blood pressure at this point, in studies on dogs. All of these rabbits developed a vicious peritonitis marked by hemorrhagic plastic deposits, purulent exudate and agglutination of the intestinal loops. Six died within a few days—from sepsis or obstruction. Two remain at the end of ten days—in fair health, but show multiple peritoneal adhesions.

Two other rabbits were opened, a drachm of ether poured in the abdomen and the wound closed. Each developed a purulent peritonitis; one died the third day, the other died from a secondary anesthesia, at which time cultures were made and proved positive to staphyloccus aureus.

This shows that a sterile abdominal cavity, insulted by an irritant such as ether, is not capable of defense against its own intestinal flora. This has been proved before—that carbolic acid or any similar destructive agent, when put on a peritoneal surface with the idea of sterilizing the field, simply destroys the integrity of the tissues to such an extent that infection through the intestinal wall always takes place.

Two control rabbits were laparotomized, had their peritoneums soiled by a colotomy wound, were washed with salt solution and closed. These made an uneventful recovery and at autopsy presented a fairly normal peritoneum.

These few experiments show rather conclusively that for rabbits, at any rate, the treatment of the peritoneum with ether—whether infected or not—is a highly improper procedure. Animals so treated develop a purulent peritonitis, or sustain an augmented lesion; recovering from this they present multiple peritoneal adhesions and may die of ileus.

The controls, washed with salt solution, do very much better and recover completely.

While this work is rather tardy and its findings unnecessary to convince many surgeons of the fallacy of the Morestin method, in view of its recommendation to army surgeons in the present war, and with the hope that it may deter some of the unwary from using this risky procedure, it is here placed before you for consideration.**

STREPTOCOCCIC INFECTIONS.*

By J. LA RUE ROBINSON, M. D., Reno, Nevada.

The purpose of this paper is to bring before the Society some of the most recent findings concerning the morphology, cultural characteristics and pathology of the streptococcus group.

Streptococci may be found almost everywhere, in water, milk, dust, feces of animals or man, and most of them are non-virulent, yet their morphological appearance is in common with the pathogenic strains.

All streptococci multiply by division in one plane of space only and are spherical in form, excepting that as the line of cleavage of cocci, when in chains, is perpendicular to the long axis of the chain, adjacent cocci often show slight flattening of the contiguous surfaces, forming, as it were, a series of diplococci arranged end to end.

A theory is advanced by Hiss and Zinsser that the streptococcus pathogenic for man is more virulent when growing in long chains and that short chains are inclined to be more saprophytic. Yet following this statement they say that a differentiation of this kind can hardly be relied upon.

The steptococcus which we shall here consider is the streptococcus pyogenes. The temperature most favorable to their growth is 99½° Fahrenheit, which is very unfortunate for the human.

Among the domestic animals those most susceptible to experimental streptococcic inoculations are white mice and rabbits. Guinea pigs and rats are less easily infected and the larger domestic animals such as cattle, horses, goats, cats, and dogs are still more refractory. Almost complete immunity prevails among birds.

Rosenow has classified several different strains which he illustrates as follows: "Taking the flexed hand, the hemolytic streptococcus occupies the position of the little finger, the pneumococcus the place of the index finger, the streptococcus viridans (representing the group of more or less saprophytic,

** From the Laboratory of Surgical Research, University of California Medical School.

* Read at the Nevada State Medical Association meeting, October 10-13, 1914.

non-hemolyzing streptococci), the middle finger the streptococcus 'rheumaticus,' the fourth finger, and the streptococcus mucosus (partaking some of the properties of both pneumococci and streptococci), the position of the thumb. In this grouping there is in general an increase in parasitism and virulence as we approach the thumb. (Streptococcus mucosus.)

"The fact that they are members of the same family is illustrated by their being members of the same hand."

Rosenow has transformed the hemolytic streptococcus, the streptococcus viridans, and the pneumococcus one into the other.

Billings, Davis, Jackson and Rosenow all agree that in many infections a pathologic specificity for certain tissues is shown when injected into rabbits, and other animals. Strains obtained from cultures made from tissues and exudates of patients suffering from chronic arthritis produce arthritis in the inoculated animal; strains obtained from the focus of patients with hemorrhagic nephritis, cause nephritis in the inoculated animal; strains obtained from the focus in the patient with rheumatic fever, endocarditis and pericarditis result in pancarditis and acute arthritis in the innoculated animal.

In the cases which we are about to report pure cultures of streptococci were grown in cases 1, 2, 7, (8?) and 10.

Case 1. I saw Andrew D., age 4½ years, February 27, 1914, in consultation with Dr. Wullschleger. The patient was suffering with a double tonsillitis. His tonsils were very large, and had a history of repeated infections. I prescribed for immediate treatment, and recommended enucleation of the tonsils when over the present attack. Dr. Johnstone saw this patient March 24, 1914, and diagnosed a double pneumonia.

Dr. W. continued to wait upon the patient, and told me from time to time that he was still sick, until April 5th, when Dr. W. called me again.

I found the patient with tonsillitis, some croupous membrane about the fauces, double otitis media, and a spasmodic cough. The patient was in an inside room in a hotel with no outlet for ventilation excepting a door opening into another room. Believing the unsanitary surroundings the cause for the continued sore throat, and croupous membrane we sent the patient to the hospital on April 15, 1914. At this time the pulse was 116, temperature 103°, and respiration from 24-30. On the afternoon of April 18th the patient was given coffee, which he vomited. My treatment consisted of spraying the nose in the recumbent position with Dobell's solution, swabbing the throat with silver nitrate, and using icthyol-phenol-glycerine in the ears. The symptoms gradually ameliorated until May 11, at which time the chart showed he was about normal. One week after he entered the hospital the surface of his body was covered with a bronze hue which faded away as he improved. There was no desquamation.

Urine Analysis: Reaction, acid; color, pale amber; sediment, slight; sp. gravity, 1020; no albumin, no mucin, no sugar, no bile; slightly increased indican; 3° urea; microscopic examination negative.

May 1st, patient vomited a dose of laxative.

May 2nd, the tonsils were removed, and the patient had no further trouble, going on to complete recovery.

During the latter part of April little children from the outside were brought into the sick room by friends, and played with the patient daily. So far as known none of them contracted the infection.

Case 2. Bertram D., age 5½, brother to Andrew D. These two patients, and their mother, Case 3, lived in the same room during their stay in the hospital, which was from April 15th, 1914, to May 16th, 1914. I saw Case 2 April 5th. Severe tonsillitis, otitis media both sides, croupous membrane covering tonsils, and pharynx extending up into naso pharynx. Cough irregular. He went to the hospital April 15th with his brother Andrew. Pulse 110, temperature 104.2°, respiration 34. This patient was very nervous, and the pulse and respiration were very much accelerated when the doctors called.

April 15th, the patient vomited a dose of laxative.

On the 16th a rough goose flesh rash on the body was noticed.

He vomited coffee on the 18th.

Large quantities of mucous were expectorated daily.

April 20th patient complained of soreness on the right side.

April 21st patient complained of soreness on the right side of nose and throat.

April 25th, patient had been very peevish for past week, crying a great deal. The throat was very sore. The outer skin rubbed off like sand. Children played with his brother in the same room daily. The temperature ranged from 100°-101°, pulse around 115. His right eyelid began to swell, and on April 26th was very much congested, and swollen shut.

Urine Analysis: Reaction, alkaline; color, amber; sediment, slight; sp. gravity 1024; distinct trace of albumin; no mucin, no sugar, no bile; excessive indican, 3.2% urea, and microscopic examination negative.

Bichloride compresses 1-10,000 were applied to the eye until May 8th, then hot compresses until May 16th, when patient left the hospital. Cultures from the discharges of the eye showed a pure culture of streptococci.

Case 3. Mrs. D., mother of Cases 1 and 2, had an attack of tonsillitis April 18th, and extensive croupous membrane covered both tonsils. There was considerable swelling, and the throat was sore. I swabbed her throat daily with ten per cent. silver nitrate for three days. At the same time she gargled with myrrh gargle, and entirely recovered within a week.

Case 4. Miss Y., age 20, an undergraduate nurse, was detailed on preceding case April 19th.

April 23, complained of a very sort throat, with a croupous membrane covering both tonsils. I swabbed her throat with ten per cent. silver nitrate, and gave her a myrrh gargle to use, with the advice to come to the office for treatment if her throat was not better within twenty-four hours. Her throat improved and she continued to work until May 1st, when she had a relapse, and Dr. Lewis was asked to see her. He swabbed her throat with twenty per cent. solution of argyrol, and prescribed potassium chlorate and alum for a gargle. She apparently was better for two or three days, when she had an attack of endocarditis, and at the same time the membrane again spread over her throat and up into the naso-pharynx.

I was asked to see her again on May 5th. She was toxic, the pulse 120 and soft, and the temperature running about 104°. The membrane was easily scraped from the throat with a swab, but would reform rapidly. Her spirits were good, and she declared every day she would be better in a day or two.

She vomited a bilious vomit every day from May 1st until May 7th, when at 11 a. m. she had a sinking spell, another about 1 p. m. and died at 4:40 p. m.

Just before she died her body was covered with a dull red rash.

Case 5. Miss S., nurse, waited on Miss Y. dur-

ing her illness. May 8th she complained of a very sore throat, a croupous membrane covering tonsils. Temperature 103°, pulse 105, vomiting. I swabbed her throat with silver nitrate ten per cent., sprayed her nose with Dobell's solution, and ordered her to bed. Urine Analysis: Negative.

May 9th, throat very sore and still covered with a membrane. Temperature 100°, pulse 90, patient feeling better.

May 10th, throat much better, only a few specks of membrane remaining. Patient wanted to get up.

May 11th, patient left her bed.

May 12th, patient came to my office; throat free from membrane but still red. I discharged her. No eruption.

Case 6. Dr. W., who attended Andrew D. and Bertram D. continuously from some time in February until May 14th, when he went to bed with a chill, and very sore throat. There was a great deal of swelling about the mouth. The temperature was 104½°, remaining about the same for a week.

His arm and shoulder began to swell, and abscessed. In about two weeks Dr. Lewis lanced the abscess, and evacuated large quantities of pus. The doctor remained quite sick with sore throat. (No chart kept.)

About June 10th a small abscess occurred just above the left knee from which pus was evacuated. No eruption.

Case 7. On April 27th, 1914, while I was waiting on Andrew D. and Bertram D., but before I saw Miss Y. after she went to bed, I did a left lower turbenectomy for Mrs. P., which was followed by a severe infection of the nose and throat involving the lymph glands on the left side of the face. The left eye was swollen shut similar to Bertram D.'s. The left ear was swollen. She vomited for several days. There was no eruption, and no otitis media.

April 29th, I called to see Mrs. P. and she complained of the packing in her nose. I removed the packing with a pair of pliers. Mrs. P.'s son, five years of age, picked up these pliers, and put them in his mouth. His mother does not know how long he had been playing with them.

Resolution was slow, and in keeping with other severe nose and throat infections of this type.

Synovitis developed on the left side, causing an almost complete ankylosis of the jaws.

Case 8. May 2nd Paul P., the five-year-old son of Mrs. P., who had picked up the pliers used in removing the packing from Mrs. P.'s nose on April 29th and placed them in his mouth, developed a high fever and vomited. Mrs. P. thought that he was bilious as he had been eating heartily for the past several days. He began to complain of earache in the right ear, which ruptured and discharged profusely. He developed a bronze rash similar to Bertram D., and it scaled off in the same manner. His ear got well promptly, and resolution was complete.

Case 9. May 8th Willis, age 14, another son of Mrs. P., had a sore throat, earache with a discharge of pus, but no other symptoms. He felt indisposed, but did not go to bed. He had no rash or any symptoms of a suspicious nature.

Case 10. Mr. X., age 39. On September 6, 1914, he developed a sort throat. On the 7th he went to bed. On the 8th he developed a general eruption. From the 7th to the 10th he had considerable fever and profuse sweats.

A physician was not called until the 10th, when his morning temperature was 102°, and pulse 96. His entire body was covered with a smooth, red rash, most marked in the thighs. On pressure the white imprint of the hand was left. There was a croupous membrane over the right tonsil. The roof of the mouth and soft palate were peppered with a red rash. The tongue was moderately coated and had bright red edges. At this time he felt well except for the sort throat. He gave a history of having vomited on the 7th and 8th. Quarantine established.

His temperature on the afternoon of the 10th was 101°, pulse 96. On the 13th, temperature and pulse normal, and skin clear. On the 21st quarantine was removed.

He had an infection of the left thumb before the throat symptoms appeared, with red lines extending to axilla.

There was no desquamation except along lines of lymphangitis above mentioned, and an area about the size of a silver dollar on the right wrist.

Discussion.

Dr. Johnstone: In the series of cases reported by Dr. Robinson there are several points of general interest worthy of discussion. First, the frequency of streptococcic infections in this section, most men who have practiced elsewhere agreeing that they meet with the infection much more frequently here than other places in their experience. This especially is true of throat and nose infections, and typical tonsillitis. The reason for this frequency is not clear.

Second. The toxic rashes and their differentiation from scarlet fever is worthy of careful consideration, especially when we remember that practically all scarlet fever throats show the same streptococcus infections and hence cultures from the throat fail to differentiate. We must depend rather on the entire symptom complex—that of simple streptococcus infections being quite different from the symptom complex of scarlet fever—and especially with regard to the rash—which if a toxic rash usually tends to appear later, has more of a tendency for a rough surface and more of a dusky or copper color and desquamation not so typical and marked.

Many cases so closely simulate scarlet fever that with our present knowledge it is well nigh impossible to differentiate with certainty, and in such cases, for the benefit and safety of the public quarantine should be established and the case regarded as one of scarlet fever.

The relation of the streptococcus group to the various disease processes and to each other is a most interesting and complicated one. Rosenow has probably done more to unravel this complicated enigma than any other investigator. He has succeeded for the first time in transforming any one member of this group into any other member of the group at will by varying their cultural environment with regard to media, oxygen pressure, etc., and has thus brought together into one group and shown their relationship a half dozen or more varieties of micrococci classified in the past as distinct and different organisms as the pneumococcus streptococcus hemolyticus, streptococcus viridens, streptococcus rheumaticus, etc. Furthermore, he has been able by animal inoculations of these transmuted strains to produce the lesions characteristic for each.

With regard to rheumatism, animals chilled and then inoculated develop the lesions much more uniformly.

This strain grows better at a somewhat lower temperature than the other strains of this group. This may account for the well-known clinical observation of the occurrence of acute inflammatory rheumatism following exposure to chilling and dampness.

Throat strains isolated during an attack of acute inflammatory rheumatism and inoculated into animals, produce arthrectic lesions in the inoculated animals, while strains isolated from the same individual several weeks after recovery fail to produce such lesions in inoculated animals, but produce, instead, the cardiac lesions, indicating that the rheumatic strain has been transmuted into the viridans strain which characteristically attacks the heart valves, producing an endocarditis.

Strains isolated from the throat and grown

under conditions to produce a certain degree of virulence, when inoculated into animals tend with striking frequency to produce gastric ulcer. If the virulence be increased or diminished this lesion is not produced but instead rheumatism or endocarditis.

In 25 out of 38 cases of arthritis deformans Rosenow has succeeded in cultivating streptococci or streptococcus-like organisms from the regional lymph glands, and these strains inoculated into animals produce similar lesions. These strains tend toward the anerobic or grow best at very low oxygen pressure.

This organism has been repeatedly isolated from cases of iritis, conjunctivitis, and from hemorrhages in the sclera, retina and iris.

Several epidemics of sore throat have been reported during the past few years where the source of the infection has been shown to be streptococcic mastitis in one or more of the herd and distributed in the milk. The ordinary streptococcus inoculated into sterile milk very soon changes its characteristics and approaches the more virulent strains, as the streptococcus mucosus, a change which possibly occurs in the streptococcus producing mastitis in the cow, after getting into the milk, and as a result of this change in characteristics of the organism, producing epidemics of sore throat in children drinking the milk.

A SHORT DESCRIPTION OF THE UNITED STATES PUBLIC HEALTH SERVICE EXHIBIT AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION (PALACE OF LIBERAL ARTS), SAN FRANCISCO, CALIFORNIA, 1915.

GENERAL REMARKS.

The Public Health Service has endeavored to present in a popular and comprehensive way the latest methods of preventing the common communicable diseases. With the limited funds available for preparing the exhibit, many things have necessarily been omitted which might properly be shown. However, such material as has been prepared has been made of a permanent character and scientifically accurate as to details of construction and information furnished. The Service will maintain an office on the exhibit floor space, where officers and attendants of the Service will be constantly stationed to explain the different exhibits. All of the Service publications will be displayed for ready reference, and bound copies of these publications will be available in case visiting physicians and health officers desire to consult same. Such exhibits as require to be inclosed in glass cases have been provided with narrow frame bronze cases with plate glass of selected quality to avoid glare and interference with proper vision. The exhibit material is grouped according to the disease which the exhibit material is designed to illustrate; in stages; and methods of prevention. The organization of the U. S. Public Health Service is explained by a chart, and a map shows where officers of the Service are stationed throughout the world. There are also models of various Public Health Service stations, including a hospital, quarantine station, and detention camp.

TYPHOID FEVER.

(a) The Story of a Typhoid Bacillus Carrier. This consists of a series of six pictures illustrating how typhoid fever is spread by carriers. A young woman, convalescent from typhoid fever, returns to work in a milk store, and infects some of her customers, one of whom dies. These pictures are displayed in a cabinet so arranged that one picture at a time is shown for a space of ten seconds. During the change from one picture to another, a curtain automatically covers the aperture through which the pictures are seen.

(b) Contact Infection in the Spread of Typhoid Fever. Two cross sections of a boarding-house are shown. The same woman serves the boarders and cares for a typhoid fever case. The figure representing the woman moves from the sick room to the dining room, then into the kitchen, and back to the dining room and sick room, being constantly traveling slowly. In the second cross section, three of the boarders are sick with typhoid fever, and one has died; indicated by crepe on the door. A descriptive label shows how this infection might have been avoided.

(c) A House Fly. A model of a house fly accurately made, thirty-two times natural size is displayed. Fly eggs and larvae magnified seventy-five times are also shown. A large number of small vials have been prepared in which are fastened fly eggs, larvae and pupae, and an adult fly. These are to be distributed to health officers and physicians as souvenirs and form a vest pocket exhibit of the life cycle of the house fly.

(d) How Oysters May Become Infected with Typhoid Fever Germs. In this model is shown a sewer mouth, discharging in a river near the seacoast. At the mouth of the river an oyster bed is located. A belt, actuated by an electric motor, slowly revolves under the surface of the water, indicating the current from the river to the oyster bed. Small black lines are painted on this belt to indicate typhoid fever germs which apparently disappear into the oyster shells as they are open for feeding.

(e) Water-borne Infections of Typhoid. Ten cities of the United States, having a population of more than one hundred thousand each, have been selected, and the typhoid fever death rate in these cities for the last ten years is shown by a series of elevations in which each sixteenth of an inch in height represents one death from typhoid fever. Each of these cities has, during the past ten years, installed some method of water purification, which is indicated, and the decrease in the number of deaths from typhoid fever is shown by the decrease in height of the elevations after the introduction of water purification methods.

(f) Influence of the Public Water Supply on the Spread of Typhoid Fever. A topographical model showing the relationship between certain towns and villages along a watercourse which at one time became polluted with typhoid fever germs. The water intake for each town is illustrated, and the number of deaths from typhoid fever during the years in question is shown. A descriptive label explains how typhoid fever infection is carried by streams, and emphasis is made of the fact that it is the time required to pass from the point of infection to the point of spread of the infection, rather than the distance, which governs the possi-

bility of infection. This is done on account of the very general impression that streams purify themselves within a certain number of miles.

(g) Typhoid Fever Death Rate in Various States. A large map of the United States is shown, on which the number of deaths from typhoid fever per thousand during the year 1913 is indicated. In the lower right-hand corner there is a water tank having a valve projecting therefrom. A legend invites the visitor to "Turn the valve and find the typhoid death rate in your State." When the valve is turned, a pointer moves up and down, to be stopped opposite the State for which the death rate is desired. While this is being done a little figure of a man climbs a ladder placed against the water tank and points with his hand to the death rate for the State opposite which the pointer is stopped.

(h) How a Well Becomes Infected with Typhoid Fever Germs. A well model showing a section through the geological formation underlying a typical country home. Drainage from the surface privy reaches the well by following layers of rock.

(i) How a Well May Become Infected Even Though Precautions Are Taken. This model also shows a section through the geological formation, but in this case the owner of the house has installed a cesspool, which under ordinary conditions would give protection, but in this case the underlying strata is limestone formation in which there always occur numerous crevices through which pollution from the cesspool reaches the well.

MALARIA.

(a) Mosquito Habitat Group. The fact that malaria is transmitted only by a certain species of mosquito is very generally known. The habits and life cycle of this mosquito are graphically shown by an enlarged model of an anopheles mounted in a case to illustrate a typical breeding pool of these mosquitoes. The pool of water is shown surrounded by the usual vegetation found in swamp areas. An adult mosquito is poised at the edge of the water, ready to fly. Floating on the surface of the water are models of eggs of anopheles, and suspended below the surface of the water so that it may be viewed by the spectator is an enlarged model of the "wiggler" stage of this mosquito. For purposes of comparison, enlarged models of the eggs and larvae of the culex mosquito are also placed in this group, so that the differences existing between the eggs and larvae of the two species are graphically shown. Descriptive labels on this habitat group explain the various features shown.

(b) How to Avoid Mosquito Breeding. A series of six glass jars designed to illustrate various methods by which mosquito-breeding can be avoided. In one jar the water has been covered by a film of kerosene oil. In another, the water has been treated with larvacide. In one, fish are placed which destroy mosquito eggs and larvae. In another jar the water has been replaced by sand, showing filling. In another, sea water has been added. From another, the water has been removed by drainage.

(c) Mosquito Breeding Tank. A large glass tank over which has been constructed a framework of glass and bronze wire forms a permanent breeding place for mosquitoes. It is designed to keep a constant supply of mosquitoes breeding in this tank, so as to show the actual living specimens of the various stages in the development of mosquitoes.

(d) Glass Models Showing the Life Cycle of the Malarial Parasite. Twenty-six models have been made by an expert, and are displayed in a consecutive series showing the development of the minute animal parasite which causes malaria, from the time it is introduced into the human system by the bite of an infected mosquito until it is again taken from human blood by another mosquito. The stages of development through which the parasite passes in the body of the mosquito are also shown, and its method of reintroduction into another person.

(e) Charts and maps showing the prevalence and distribution of malaria throughout the United States and the economic loss caused annually by this disease.

PLAGUE.

(a) An enlarged model of the rat flea, which is the principal agent in spreading bubonic plague from rats to man.

(b) A model showing a house of ordinary cheap construction which easily becomes rat infested. An uncovered garbage barrel shown offers an abundant supply of food for such rats as live in the vicinity, and the spaces between the partitions and openings left around improperly installed sewer and water pipes, show how rats freely pass from one part of the building to another.

(c) Rat-proof Houses. Several model houses have been constructed under the supervision of officers of the Service in which the proper methods of construction are shown. It is possible to entirely eliminate rats from human habitations if the proper methods of construction are followed, the details of which are shown by these model rat-proof houses.

(d) The U. S. S. "Ratless." This name has been given to a section model of a ship constructed in such manner that it becomes practically rat-proof. Automatic rat runs are installed so that such rats as might come on board with cargo and stores would be likely to leave the ship through the runways provided. A fumigating machine is installed on deck, and pipes lead to all the holds so that the ship can be easily freed from rats and other vermin. The staterooms, crews' quarters, store room, etc., are rat- and vermin-proof in construction.

(e) The Natural Enemies of the Ground Squirrel. The fact that ground squirrels are subject to infection by bubonic plague is a serious problem in the western states. A constant warfare is being waged against ground squirrels by the local, state and national health authorities in California. The natural enemies of the ground squirrel are shown in this model of a rocky cave, showing owls, snakes, coyotes, eagles, etc., all of which destroy ground squirrels.

(f) Squirrel Destructors. A full-sized working model of the carbon bisulphide pump used to destroy ground squirrels in their holes. A quarter

section model is also shown so that the internal parts of the apparatus may be seen and understood.

(g) A Map Showing the World Distribution of Plague. In order to avoid the spread of plague, it is necessary to know where cases of bubonic plague exist. All the known foci are shown on this map, which will be kept constantly up to date during the progress of the exposition.

PARASITES OF MAN, INCLUDING GERMS OF CERTAIN DISEASES.

Transparencies and dimensional models have been prepared of thirty-four different common parasites of man, including the germs of common diseases. Glass models of the eggs of seven common intestinal parasites are shown. It is believed that these models will be of great assistance to physicians in fixing the appearance of these eggs in mind so that in making microscopical examinations of excreta to determine the presence of parasites the different parasitic eggs may be easily recognized. Descriptive labels have been prepared for each parasite, giving its life history, statistical data regarding the disease caused by the parasite, and other pertinent information.

YELLOW FEVER.

Yellow fever is another disease which is spread entirely by the bite of infected mosquitoes. The mosquito which transmits yellow fever is strictly a domestic insect and breeds only near human habitations. An enlarged model of this mosquito, the aedes colopus, has been made and is displayed in an ordinary wooden cistern or water tank, over which a glass case has been placed. A map shows the world distribution of yellow fever and the possible influence of the change in travel routes in spreading yellow fever to other parts of the world, through the opening of the Panama Canal.

SMALLPOX.

A series of wax models show the lesions of smallpox. This is contrasted with the lesions of vaccination. Seven wax models of a human arm show the different stages of a typical vaccination from the time the arm is scarified until the vaccination sore heals and leaves a typical pitted scar.

TUBERCULOSIS.

A model of the Public Health Service sanitarium at Fort Stanton, New Mexico, is displayed. An enlarged model of the tent house used at this sanitarium has also been prepared. Statistical data in the form of charts showing the economic loss from tuberculosis in the United States are also exhibited. There are more deaths from tuberculosis than from any other single cause. Tuberculosis kills chiefly in the most active and productive period of life.

RABIES.

Two dogs are shown, one being muzzled with the ordinary leather muzzle in common use, and the other with a metallic muzzle designed by an officer of the Service. This muzzle is comfortable for the dog, but absolutely prevents his biting other animals or persons. Charts displayed with these two muzzled dogs give data relative to the prevalence of rabies in the United States and its treatment according to the Pasteur system.

ROCKY MOUNTAIN SPOTTED FEVER.

This is a quite fatal disease in certain of the western states. The disease is spread by the bite of an infected tick. Models of the male and female of this tick are shown. A map shows the distribution of this disease, and printed posters explain how the disease may be controlled or eradicated.

TYPHUS FEVER.

A map shows the distribution of typhus fever throughout the world during 1913. This disease, it is now known through the work of Anderson and Goldberger of the Public Health Service, is transmitted only by body lice. A large model of a body louse is shown, and its method of transmission pictorially explained.

TRACHOMA.

The communicable eye disease, trachoma or granulated eyelids, is prevalent in many sections of the United States, particularly in the Appalachian Mountain chain. During the period from October, 1912, to April, 1914, 165,907 persons, mostly school children, were examined by officers of the Public Health Service, and 2,393 cases of trachoma were found; 8,940 cases of trachoma were found among 39,231 American Indians examined during this period. In order that the disease may be recognized enlarged models have been made of the human eye and surrounding region. One of these models shows the natural condition of the conjunctiva of the upper lid when everted. Another model shows the appearance of the upper lid during an active trachoma infection. A third model shows how the eyelid appears after the active stage of the disease has passed and scar tissue has been formed.

DIPHTHERIA.

Blown glass models of the germs of diphtheria are shown and information relative to the deaths caused by this disease is given on printed posters. Charts show the effect of treatment of diphtheria by anti-toxin, and the great reduction in the number of deaths caused by this disease since the introduction of this system of treating diphtheria.

MISCELLANEOUS.

(a) Economic Loss During One Year in the United States Through Preventable Diseases. This is an allegorical group. The figure of Uncle Sam represents the United States and the figure of a dragon represents diseases that could be avoided if proper safeguards were taken. A constant stream of gold is shown passing from the pocket of Uncle Sam into the dragon's mouth. This annual loss amounts to billions of dollars during a year, and is just as real as if the money actually streamed out of the United States Treasury. This loss cannot be prevented by either national, state or municipal health authorities unless every citizen co-operates fully in the efforts made to diminish preventable diseases.

(b) The Village of a Thousand Souls. A model showing a typical country village of about 275 houses. Certain of these houses in various parts

of the village have different colored transparent roofs. Electric lights have been installed in these houses having transparent roofs, arranged in three series; one series of lights show the number of deaths from tuberculosis, these houses having white roofs; another series show the number of deaths from pneumonia, these houses having red roofs, and the third series show the number of deaths from cancer, these houses having green roofs. The lights show up consecutively and at the time the various colored lights appear an automatic sign gives the death rate from the disease in question.

(c) Sanitary and Insanitary Farmhouse. This model shows a typical farmhouse constructed without any special attention to sanitary environment. Mosquito and fly breeding places are present. A surface privy allows the soil to become infected with the germs of typhoid fever and the eggs of hookworm. All of these conditions are corrected on the other half of the model where a proper sanitary farmhouse, barn, and surroundings, are shown.

(d) Sanitary and Insanitary Rural Schools and Surroundings. The model showing an insanitary rural school portrays the usual conditions found at ordinary country schools. The part of the model showing a sanitary rural school has the latest type school building constructed. Attention is paid to the source of water supply, the method of disposal of excreta, prevention of fly and mosquito breeding, and provision is made for intelligent direction of the energies of the children by providing playgrounds and school gardens.

MENTAL HYGIENE.

A series of charts has been furnished by the officer of the Public Health Service serving with the Society for the Study and Prevention of Mental Diseases. These charts show the prevalence of insanity in the United States, the cost of the care of the insane, the proper treatment and environment that should be given to dependents of this class, and other striking facts in connection with the increase of insanity.

WATER.

(a) Recent studies have shown that the degree of infection of water can be quite closely determined by microscopic examination of water to determine the nature of the minute animal and vegetable organisms found therein. Twenty-four blown glass models illustrating these various minute forms of animal and vegetable life have been made by an expert glass blower. These models are displayed in a glass case, arranged in three series. One series of organisms are found only in highly polluted water. Another series are found only in water showing a moderate degree of pollution, and the third series of models are of organisms found only in clean water. These organisms are displayed in their natural colors, and this exhibit is very beautiful from an artistic standpoint. At the same time it gives accurate scientific data relative to these minute organisms, which are becoming of great interest to sanitarians.

(b) Emergency Hypochlorite Plant for Water Disinfection. This is an actual working plant, constructed of material available in any community upon short notice. It consists of a series of barrels in which the hypochlorite of lime is mixed with the water and introduced into the water system by an automatic regulator which can be set to give the desired amount of disinfectant required according to the local conditions.

(c) A Traveling Water Analysis Laboratory. This is a compact, complete, portable laboratory designed by the Minnesota State Board of Health officials and used by them in connection with the examination of sources from which water is obtained by common carriers for passengers in interstate traffic.

(d) Maps and charts showing how cholera, dysentery, and other diseases, are spread by polluted water.

SEWAGE TREATMENT AND DISPOSAL OF EXCRETA.

(a) Sewage Treatment Plant. This model is comprised of (1) a diversion "manhole," (2) an Imhoff tank, (3) a dosing chamber, and (4) a sand filter. The sewage from the house or houses first passes into the diversion manhole, where it can be either sent through the Imhoff tank or diverted when repairs are necessary. When the sewage passes through the Imhoff tank it takes out the solids which float and holds such solids until they decompose into unobjectionable sludge. The sewage then passes into the dosing chamber, so that its flow to the sand filter may be regulated. The digested sewage passes through the sand filter free from all objectionable odors and disease-producing bacteria. When the sewage leaves the filter tank it is quite clear and of an attractive appearance.

(b) A sectional model of a special type privy, known as the L. R. S. privy, for use in connection with suburban and country homes.

(c) Another sectional model showing how an L. R. S. privy might be permanently installed by constructing the receiving and discharging tanks of concrete.

(d) Model of a sanitary privy of a design approved by the U. S. Public Health Service for installation in rural communities.

(e) Model of a special design of sanitary pail. This pail is recommended for use in small villages where night soil is collected and disposed of.

WORKING MODEL BOARD OF HEALTH LABORATORY.

One of the most interesting features of the Public Health Service exhibit is an actual working laboratory, fully equipped with all modern apparatus, such as incubators, sterilizers, electric centrifuges, microtomes, microscopes, etc. A competent bacteriologist will carry on actual laboratory procedures, such as examinations of water, performing Wassermann reactions, making cultures for diphtheria or typhoid fever, and such other work as is usually done by a board of health laboratory. Demonstrating microscopes will be used in order to show visiting physicians and health officers various parasites and other specimens in which they may be interested.

MOVING PICTURES.

The manager of the moving picture division of the Government Exhibit Board has had films made showing the work of the Public Health

Service at Ellis Island in inspecting immigrants. The work of the Hygienic Laboratory, Washington, D. C., is also exhibited as a two-reel feature. Another film of moving pictures shows the work of the U. S. Public Health Service in the eradication and treatment of trachoma in certain sections of the mountainous part of the United States. Other films will show the work of the Service in ground squirrel eradication in California, the inspection of vessels at national quarantine stations, and such other features of the work as can be presented in an interesting manner by the use of motion picture films.

In addition to the above, a Health Officer's library is a part of the office equipment of the Public Health Service exhibit. Books for this purpose could not be purchased from the exhibit fund, owing to its limitations, but publishers gladly donated volumes for this purpose.

Photographs will be made of all the various models, charts, maps, and other features of the exhibit, and a Service bulletin will be issued describing in detail everything shown, giving all the reading matter displayed on the descriptive labels.

This Bulletin will not be available for distribution until during the latter part of the Exposition period.

Senior Surgeon C. C. Pierce is in charge of the Public Health Service exhibit. He was one of the medical officers of the Panama Canal, devoting ten years to that work. Dr. Pierce is also the chief sanitary officer for the Panama-Pacific International Exposition, being in charge of the sanitation of the grounds and buildings and the preservation of the health of the thousands of employees.

MORE OR LESS MEDICAL BILLS.

The following list shows the action upon various medical and public health bills by the last legislature, and their status at the time of writing. Some corrections and further notice of the action of the Governor will appear later:

Bills Relating to Public Health Matters Introduced by the State Board of Health at the Forty-First Session of the California Legislature.

A. B.	S. B.	Description and Result.
846	796	Amend Cold Storage Act. Passed to Governor.
	1046	Amend Sect. 9 and 22 Pure Food Act. Approved by Governor.
	1048	Amend Sect. 21 Pure Food Act. Approved by Governor.
47	616	Amend Food Sanitation Act. Held in Senate P. H. & Q.
932	821	Nurses' Registration Act. Passed to Governor.
988	838	Sanitary Engineering Dept. Passed to Governor.
440	95	Increase Salary Sec'y. B. of H. Passed to Governor.
597		Contagious Disease Act (App. $50,000). Passed to Governor.
718	758	Ophthalmia Neonatorum (App. $3,000). Passed to Governor.
757	585	Abolishing Statutory Position. Held in Assembly P. H. & Q.
90	656	An Act to Allow Pest Houses in City Limits. Held in Assembly P. H. & Q.

Endorsed by State Board of Health.

446	148	Tuberculosis Bureau (App. $75,000). Passed to Governor.

Bills Introduced at the Forty-First Session of the California State Legislature in Re Practice of the Healing Art, Etc.

(Not Introduced by State Board of Health.)

A. B.	S. B.	Description and Result.
	102	An Act providing for the admission of humane officers to places where experiments are performed upon living animals. Passed to Governor.
	109	An Act to insure the better education of practitioners of dental surgery. Refused passage.
	276	An Act relating to granting of certificates to practice medicine and surgery. Held on third reading file, Senate.
	310	An Act for the regulation of the practice of drugless system or treating sick or afflicted human beings. Refused passage in Senate.
	339	An Act to insure the better education of dental surgeons, etc. Passed to Governor.
544	443	An Act to regulate the examination of applicants for license to treat diseases. Approved by Governor.
611	482	An Act to create the office of dental surgeon. Held on third reading file, Assembly.
770	708	An Act to regulate the practice of pharmacy and the appointment of a Board to be known as the California State Board of Pharmacy. Passed to Governor.
	834	An Act to regulate the practice of pharmacy and to provide for the appointment of a Board to be known as the California State Board of Pharmacy. Held in Com. P. H. & Q.
252		An Act for the regulation of the practice of drugless system or method of treating sick or afflicted human beings. Held on third reading file, Assembly.
256	1078	An Act authorizing and regulating the practice of chiropractic, etc. Passage refused in Senate.
640		An Act to regulate the examination of applicants for license and the practice of those licensed to treat diseases, injuries, etc., of human beings. On second reading file, Assembly.
272		An Act relating to the granting of certificates to practice medicine and surgery to graduates from legally chartered or reputable medical schools of the State of California. Held in Com. on M. & D. L.
190		An Act to prohibit the use of arsenic, any alkaloid, cocaine, etc., in the practice of dentistry. Held on third reading file, Assembly.
210		An Act to amend the Penal Code by adding a new section relating to any physician, nurse or other person in attendance upon any person afflicted with contagious or infectious disease. Held on second reading file, Assembly.
1085	827	An Act to regulate the examination of applicants for license and the practice of those licensed to treat diseases, etc., of human beings. On second reading file, Assembly.
1268		An Act to prohibit the exposure of deformed or diseased human beings or parts thereof. In Com. P. H. & Q., Senate.
1357		An Act authorizing and directing the State Board of Health to establish the State Barber Registration and

A. B.	S. B.	Description and Result.
		Sanitation Bureau. Refused passage in Assembly.
1407		An Act to regulate the charging or receiving of compensation for treatment of disease. On second reading file, Assembly.
428		An Act authorizing and regulating the practice of cosmetic surgery and creating a State Board of Cosmetic Surgery. On second reading file, Assembly.
496		An Act prohibiting the advertisement or publication of any advertisement that any person will cure or treat venereal disease, etc. Passed to Governor.
497		An Act to amend Section 274 of the Penal Code relating to administering drugs, etc., with intent to produce miscarriage. Passed to Governor.
523	434	An Act to revise the law in relation to the suppression and prevention of the spread of contagious and infectious diseases in domestic animals. On second reading file, Assembly.
632		An Act to regulate the practice of pharmacy in the State of California. Second reading file, Assembly.
641		An Act to regulate the examination of applicants for license to treat diseases, injuries, etc., of human beings. Held in Com. on M. & D. L.
642		An Act to regulate the examination of applicants to treat diseases, etc., of human beings. Held on second reading file, Assembly.
1419		An Act to provide for the establishment and maintenance of a Bureau of Dental Sanitation under the direction of the State Board of Health. Passage refused in Assembly.

Bills Relating to Public Health Matters Introduced at the Forty-First Session of the California Legislature.

(Not Introduced by State Board of Health.)

14	10	An Act to protect the health of persons handling Portland Cement. Refused passage in Assembly.
	32	An Act to amend the Civil Code relating to the furnishing of water for family use. Held in P. H. & Q. Committee.
	34	An Act to provide for the establishment of Sanatoria, Farm Colonies, etc., for the treatment of tuberculosis. Held in Committee on Finance.
	39	An Act to require physical culture and health development in public schools. Held in Committee on Education.
	61	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Held in Committee on Agriculture.
	76	An Act to regulate the building of tenement houses in cities and towns. Held in Committee on P. H. & Q.
	123	An Act authorizing municipal corporations to permit other municipal corporations to construct and maintain sewers, water mains. Approved by Governor.
403	342	An Act to establish a State Board of Embalmers, etc. Approved by Governor.
	360	An Act directing the State Bureau of Vital Statistics to collect statistics relating to marriage and divorce. Held in Committee on Finance.
535	409	An Act to regulate bakeries; to provide for inspection, etc. Held in Committee on P. H. & Q.
526	410	An Act defining mattresses, prohibiting the use of unsanitary and unhealthy materials therein. Passed to Governor.
	434	An Act in relation to the suppression and prevention of the spread of contagious and infectious diseases among domestic animals. Held in Committee on Agriculture.
593	500	An Act to regulate the examination of applicants to treat disease, injuries, etc., of human beings. Withdrawn by author.
	511	An Act to provide for the registration of births, deaths, etc. Passed to Governor.
	558	An Act relating to the Constitution of the State Board of Health. Passed to Governor.
	585	An Act relating to the office of the State Registrar of the Bureau of Vital Statistics and State Board of Health. Held in Committee on P. H. & Q.
	732	An Act to regulate the building and occupancy of hotels and lodging houses. Held in Committee on P. & Q.
	755	An Act relating to the pollution of streams and public waters. Passed to Governor.
923	798	An Act providing for the organization of the State Board of Health. Held in Committee on P. H. & Q.
	858	An Act relating to keeping perishable foods in cold storage. Held in Committee on P. H. & Q.
639	915	An Act relating to nuisances and their abatement and conferring certain powers upon the State Board of Health. Held in Committee on P. H. & Q.
	948	An Act for the prevention of blindness in the newly born. Held in Committee on P. H. & Q.
	960	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Approved by Governor.
	993	An Act to regulate the sale of impure and unwholesome milk. Withdrawn by author.
	999	An Act to regulate the retinting and repapering of any house or building which is occupied by human beings. Held in Committee on P. H. & Q.
	1029	An Act to prohibit the contamination of streams, etc., by the discharge and flow of petroleum. Held in Committee on Oil Industry.
1267	1138	An Act to regulate the building and occupancy of dwelling houses. Withdrawn by author.
	1165	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Held in Committee on P. H. & Q.
	1175	An Act to regulate the sale of butter that has been shipped into the State of California from any place outside of the United States. Approved by Governor.
	1177	An Act to improve the milk and cream supply. Held in Committee on P. H. & Q.
	1178	An Act to regulate the building and occupancy of hotels and lodging houses. Held in Committee on P. H. & Q.
1549	1227	An Act to regulate the sale of impure

A. B.	S. B.	Description and Result.
		and unwholesome milk, to grade milk, to provide rules and regulations therefor. Passed to Governor.
	1148	An Act to provide for local improvements upon streets, etc., and for the construction of sewers in municipalities. Held in Committee on Mun. Corp.
1283	1188	An Act to authorize municipalities to declare noxious or dangerous weeds a nuisance. Passed to Governor.
	1207	An Act to protect public health from infection caused by exhumation of the remains of deceased persons. Passed to Governor.
	1211	An Act to regulate the sale of impure or unwholesome milk, to grade milk, to establish inspection service. Withdrawn by author.
1525	1226	An Act relating to state hospitals for the insane and other incompetent persons. Approved by Governor.
1357		An Act authorizing the State Board of Health to establish the State Barber Registration and Sanitation Bureau. Passage refused in Assembly.
10		An Act to provide for the establishment, maintenance and control of sanatoria, farm colonies, etc., for the treatment of tuberculosis and making appropriation. Held in Committee on Ways and Means.
4		An Act relative to the furnishing of drinking water and individual drinking cups on passenger trains. Held in Committee on Pub. Util.
14		An Act to protect the health of persons employed in handling Portland cement. Refused passage in Assembly.
36		An Act relating to hotels providing for the sanitary method of keeping and handling bed clothes, etc. Approved by Governor.
184		An Act to regulate the sale of eggs that have been shipped into the State of California. Passed to Governor.
185		An Act to regulate the sale of food and drink, the ingredients of which are part composed of eggs shipped into the State of California. Passed to Governor.
186		An Act to regulate the placing of cards in all packages of food products which are composed in part of eggs into the State of California. Passed to Governor.
1475		An Act to establish a standard for evaporated milk and condensed milk. Held in Committee on L. S. & D.
1490		An Act to provide for the indicating of ingredients of dairy products and of the name and address of the manufacturer. Held in Committee on L. S. & D.
1536		An Act to improve the milk and cream supply and to promote sanitary methods in the production and marketing thereof. Held in Committee on L. S. & D.
271		An Act to prevent the sale of dairy products from unhealthy animals and produced under unsanitary conditions. Held in Committee on L. S. & D.
283		An Act to regulate the sale of crabs that have been shipped into the State of California. Held in Committee on F. & G.
339		An Act to provide for the incorporation and organization of municipal water districts, etc. Held in Committee on Irrigation.
347	655	An Act to provide for branding on the back of all crabs the name of the place where they were caught. Passed to Governor.
358		An Act to protect the health of underground workers. Held in Committee on M. & M.
431		To repeal an Act entitled An Act regulating the cleaning, laundering and sale of wiping rags. Held in Committee on P. H. & Q.
453		An Act to amend an Act entitled An Act to regulate the building and occupancy of tenement houses. Held in Committee on Judiciary.
589	145	An Act to amend Sect. Seven of an Act entitled An Act to regulate the sale of poison. Passed to Governor.
597		An Act to prevent the introduction and provide for the investigation of contagious or infectious diseases and appropriating money for such purposes. Passed to Governor.
633		An Act to amend the Penal Code of the State of California by adding a new section to fix the punishment for fraudulent advertising. Held in Committee on Judiciary.
696		An Act to promote public health and to prevent fraud or deception in the sale of butter or in the sale of milk or cream intended for butter making. Held in Committee on P. H. & Q.
758		An Act to validate the organization of sanitary districts, etc. Passed to Governor.
959		An Act to amend Section 635 of the Penal Code relating to the pollution of streams, etc. Held in Committee on F. & G.
1077		An Act requiring every packing house, mercantile or manufacturing establishment, etc., to be heated so as to be comfortable. Refused passage in Assembly.
1162	361	An Act directing the State Bureau of Vital Statistics to collect, compile and present statistics relating to marriage and divorce. Held in Committee on Jud. & Finance.
1299	988	An Act to regulate the building and occupancy of tenement houses. Passed to Governor.
1396	1101	An Act to amend Section 2 of an Act to prevent the supply of water dangerous to health for domestic purposes. Passed to Governor.
1464	1144	An Act relating to the use of the public waters of the State of California. Held in Committee on Irrigation.
1475		An Act to establish a standard for evaporated and condensed milk. Held in Committee on L. S. & D.
701		An Act to prevent the manufacture or sale of dairy products from unhealthy animals, or that are produced under unsanitary conditions; to prevent deception or fraud in the production and sale of renovated butter, etc. Passed to Governor.
1147		An Act for preventing the manufacture or sale of adulterated foods and liquors. Passed to Governor.
1045		An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Passed to Governor.
1047		An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Approved by Governor.
238		An Act to regulate the preparation and sale of pasteurized milk. Held on third reading file.

A. B.	S. B.	Description and Result.
	582	An Act to promote public health; to prevent fraud or deception in the sale of milk intended for butter making. Held in Committee on Agriculture.
1565		An Act to provide for the formation, government and operation of mosquito districts and to facilitate the extermination of mosquitoes, flies and other insects. Passed to Governor.
1525	1226	An Act to amend Section twenty-one hundred forty-five of the Political Code relating to state hospitals for the insane. Approved by Governor.
564		An Act relating to public health and safety and providing for the regulation and inspection of hotels and public lodging houses. Held on third reading file, Assembly.
524	403	An Act to require employers to furnish without charge pure drinking water to employees. Passed to Governor.
	442	An Act to regulate the building and occupancy of hotels and lodging houses. Held on third reading file.
	33	An Act to require water companies to supply with water the inhabitants of territory for which they have a franchise. Held on third reading file.
	895	An Act to promote the better education of nurses and limiting the hours of female pupil nurses. Held on third reading file.
	1185	An Act to provide for work upon streets, etc., and for the construction of sewers within municipalities. Held on third reading file.
540		An Act providing a minimum standard of sanitation for all labor camps, etc. Passed to Governor.
	1174	An Act to regulate the sale of food ingredients which are in part composed of butter shipped into the State of California. Held on third reading file.
	1176	An Act to regulate the placing of cards in all packages inclosing food products which are in part composed of butter shipped into the State of California from any place outside of the United States. Held on third reading file, Senate.
	1180	An Act to provide for the division of municipalities into sewer districts.
?		Held on third reading file, Senate.

SOCIETY REPORTS

ALAMEDA COUNTY.

The regular monthly meeting of the Alameda County Medical Association was held at the Hotel Oakland on Tuesday evening, April 20th, 1915.

The meeting was called to order by the President, Dr. Reinle, and the minutes of the two previous meetings were read and approved.

The following program was then presented:

1. A Water-borne Typhoid Fever Epidemic. Dr. W. A. Sawyer.

2. "Little Things in Medicine." Dr. A. L. Cunningham.

Both of these papers were very interesting, Dr. Sawyer's being discussed by Drs. Force, McCleave, Lackey and Archibald, and Dr. Cunningham's by Drs. Chamberlain, L. P. Adams, Emerson, Stratton, Krone, W. A. Clark, and Ringolsky.

Dr. McCleave exhibited a case of Cretinism in a boy about five years of age.

On motion, a committee consisting of Drs. J. N. Force, Romilda Paroni and W. A. Sawyer was appointed by the President to draw up a set of resolutions of sympathy in regard to the death of Dr. Edith J. Claypole.

The secretary read letters calling attention to the summer session of the Stanford University Medical School, and of the meeting of the 7th Pan-American Medical Congress in San Francisco in June.

There being no further business the meeting adjourned.

ELMER E. BRINCKERHOFF, Sec'y.

FRESNO COUNTY.

The regular May meeting of the Fresno County Society was held in the office of Dr. F. M. Hayden. A good attendance was present to listen to and discuss an excellent paper on The Medical Treatment of Duodenal Ulcer by Dr. Kenneth J. Staniford.

Dr. Audley Sanders of Lemoore, Kings Co., and Dr. John Allen of Raymond, Madera Co., were elected to membership.

CLIFFORD D. SWEET,
Assistant Secretary.

SACRAMENTO COUNTY.

The regular April meeting of the Sacramento Society for Medical Improvement was called to order by Vice-President S. E. Simmons, at the Hotel Sacramento, at 8:45 p. m. April 20th. On account of the rather late start the report of cases was dispensed with, and the society heard a very excellent paper upon Arthritis, given by Dr. Leonard W. Ely, of San Francisco. Following the discussion of the paper Drs. A. B. Diepenbrock and J. C. Cummings were elected to membership. Applications of Drs. Grazer, Dillon, Hale and Zimmerman were read. Adjourned 10:50 p. m.

F. F. GUNDRUM, M.D., Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of April, 1915, the following meetings were held:

Section on Medicine, Tuesday, April 6th.

1. A Clinical Paper on Reflex Symptoms of Gastrointestinal Origin. Harry B. Reynolds.

2. Early Diagnosis of Tabes Dorsalis. W. F. Schaller. Discussed by J. Rosenstirn, H. J. Nichols, K. Pischel and L. Schmitt.

3. Brief Remarks Concerning the Luetin Reaction in Syphilis. Harry E. Alderson. Discussed by H. V. Hoffman.

General Meeting, Tuesday, April 13th.

1. The Legal Relation of Medical Men to Their Patients; with special emphasis on how they must care for the sick in order to prevent the recovery of damages in malpractice suits. H. T. Morrow, Los Angeles, Attorney for the Medical Society, State of California.

2. Remarks of Malpractice Suits in California defended by the State Society; and suggestions from that experience. Philip Mills Jones.

Discussion.

A. What is the Matter? Harry M. Sherman.

B. The Case of Malpractice Suits From the Ethical Standpoint. T. W. Huntington.

C. From the Standpoint of the Medical Expert. G. Franklin Shiels.

Surgical Section, Tuesday, April 20th.

1. Report of Four Cases of Perforation of the Intestine. Gilbert M. Barrett.

2. Recent Advances in the Diagnosis of Ureteral Calculi. Frank Hinman. Discussed by R. L. Rigdon, M. Krotoszyner, W. P. Willard and A. B. Grosse.

3. Torticollis. A. L. Fisher. Discussed by J. T. Watkins, A. S. Keenan and S. Stillman.

Eye, Ear, Nose and Throat Section, Tuesday, April 27th.

1. Demonstration of Cataract Cases Operated by the Smith Intracapsular Method. (Five to six months after operation.) A. S. Green.
2. Demonstration of Cataract Case Operated by the Iris Method. K. Pischel.
3. Case of Keratoconus. H. Barkan.
4. Congenital Deviation of Septum occluding Posterior Nares. H. McNaught.
5. Report on Forty Operated Antral Cases. H. McNaught.
6. The X-ray Diagnosis in Accessory Sinus Diseases. W. W. Boardman.
7. The Ethmoid and Sphenoid Suppurations. A. J. Houston.
8. The Eye and Orbital Lesions Secondary to Accessory Sinus Diseases. W. F. Blake.
9. Operative Treatment of Frontal Sinus Disease. H. B. Graham. Discussed by C. F. Welty and K. Pischel.

AMERICAN ACADEMY OF MEDICINE.

The sessions of the fortieth annual meeting of the Academy, with the single exception of the social session, which is to be held in the St. Francis Hotel, will be held in rooms to be announced in the Auditorium Hall of the Panama-Pacific Exposition. The first session on Friday afternoon, June 25th, will be devoted to executive business. The evening session, beginning at eight o'clock, will be devoted to the address of the President, Dr. Woods Hutchinson, and the annual address on "The Relation of Medicine to the Peace Movement," by Dr. David Starr Jordan, Chancellor of Leland Stanford University. The scientific sessions will continue through Saturday and Monday, observing the following provisional program, which is still subject to revision:

1. The effects of transportation upon food products.
   I. Transportation, refrigeration and conservation of poultry and fish products. Mary E. Pennington, Ph. D., Chief of Food Research Laboratory, Department of Agriculture, St. David's, Philadelphia, and Dr. E. D. Clark, Bureau of Chemistry, Department of Agriculture, Washington, D. C.
   II. Vegetables, fruits, etc. A. V. Stubenrauch, Professor of Pomology, University of California, Berkeley.
2. The control of the preparation and preservation of food products intended for commerce.
   a. M. Dorset, Chief of the Biochemic Division, Bureau of Animal Industry, Washington, D. C.
   b. B. F. Ladd, Food Commissioner of North Dakota, Agricultural College, N. D.
3. The economic importance of Federal inspection of meat and meat products destined for commerce.
   a. W. H. Lipman, M.D., Swift and Company, Chicago.
   b. Dr. George Deitwig, U. S. Department of Agriculture, Bureau of Animal Industry, Washington, D. C.
4. The power of quarantine in its relationships to commerce.
   M. W. Glover, M.D., Surgeon, U. S. P. H. S., San Francisco.
5. The prevention of Oriental diseases in the ports of America.
   Rupert Blue, M.D., Surgeon-General U. S. P. H. S., Washington, D. C.
6. The control of hookworm diseases by the Pacific steamship companies.
   Herbert Gunn, M.D., San Francisco.
7. Hookworm disease in its relationship to immigration and commerce in the Philippines.
   Victor G. Heiser, M.D., Director of Health of the Philippine Islands, Manila.
8. The hospital organization of railway systems.
   C. W. Hopkins, M.D., Chief Surgeon, Chicago and Northwestern Railway Co., Chicago.
9. The transmission of typhoid on trains and steamboats.
   W. C. Rucker, M.D., Assistant Surgeon-General, U. S. P. H. S., Washington, D. C.
10. Transportation of Consumptives.
    Henry B. Hemenway, M.D., Evanston, Ill.
11. The disease carrier on train and steamboat.
    W. A. Sawyer, M.D., Director, Hygienic Laboratory, State Board of Health, Berkeley, Cal.
12. The control of sewage upon vessels and railway coaches.
    Leslie C. Frank, Sanitary Engineer, U. S. P. H. S., Washington, D. C.
13. The transportation of insects with especial reference to disease carriers.
    Vernon Lyman Kellogg, B.S., M.S., Prof. of Entomology, Leland Stanford University, Cal.
14. The disinfection of Pullman cars.
    S. H. McNaught, M.D., Chief Surgeon, Colorado and Southern Railway, Denver. (Informal discussion.)
15. The need of medical conquest before the establishment of commerce.
    Richard P. Strong, M.D., S.D., Prof. of Tropical Medicine, Harvard Medical School, Boston.
16. The relationship of compensation acts to interstate commerce.
    Christopher Bradley, Esq., San Francisco.
17. The health protection of the sailor in the merchant marine.
    R. M. Woodward, M.D., Surgeon, U. S. Marine Hospital, San Francisco.
18. A sociologic experiment in the treatment of tuberculous working women.
    Philip King Brown, M.D., San Francisco.

AMERICAN PROCTOLOGIC SOCIETY.

Seventeenth Annual Meeting, San Francisco, Cal., June 21 and 22, 1915.

Headquarters: St. Francis Hotel.

Place of Meeting: Civic Auditorium.

Monday, June 21, 1915.

Executive Council meets at 11 a. m.

First regular session at 2 p. m.

Annual address of the President—Subject: "Retrospect and Prospect." Louis J. Krouse, Cincinnati, Ohio.

1. A Review of Proctologic Literature for 1914.
   Samuel T. Earle, Baltimore, Md.
2. Prolapsus Recti and Its Mechanics.
   Wm. M. Beach, Pittsburgh, Pa.
3. Causes of Dissatisfaction with Hemorrhoidal Operations.
   Rollin H. Barnes, St. Louis, Mo.
4. Report of a Case of Carcinoma of the Sigmoid: with Stereo-Radiograms.
   Walter Irwin Le Fevre, Cleveland, Ohio.
5. Emetin Hydrochloride in the Treatment of Amebic Dysentery.
   Geo. B. Evans, Dayton, Ohio.
6. Cases of Anal Tuberculosis Treated with Radium.
   Frank C. Yeomans, N. Y. City, N. Y.
7. Congenital Dilatation of the Colon.
   Louis J. Hirschman, Detroit, Mich.
8. The Importance of Position in Examination, Operation and Treatment of Rectal Diseases.
   Granville S. Hanes, Louisville, Ky.
9. Which is the Best Anesthesia to be Used in Anal and Rectal Surgery.
   Wm. H. Kiger, Los Angeles, Cal.
10. Further Observation on the Treatment of Pruritis Ani by Autogenous Vaccines.
    Dwight H. Murray, Syracuse, N. Y.

11. Peritoneal Adhesions and Their Relation to Intestinal Stasis.
Jas. A. MacMillan, Detroit, Mich.
12. Constipation: Its Treatment.
Lewis H. Adler, Jr., Philadelphia, Pa.
13. The Ultimate Nervous Results of Acute Angulation of the Sigmoid with Consequent Fecal Stasis.
W. H. Axtell, Bellingham, Wash.
14. Rectal Ulceration in Pellagra.
J. Coles Brick, Philadelphia, Pa.
15. (a) Fecal Abscess in Pouch of Douglas, Following Typhoid: Report of Case.
(b) Ischiorectal Abscess in Nine Day Old Infant. Report of Case.
Alfred J. Zobel, San Francisco, Cal.

CLIMATOLOGICAL ASSOCIATION.

The American Climatological and Clinical Association will hold its annual meeting in San Francisco on June 18th and 19th in a private room at the Clift Hotel which will also be the headquarters of the Society. The National Tuberculosis Society and any members of the medical profession interested in the special work of the Society are invited to attend its meetings.

Very truly yours,

PHILIP KING BROWN,
Chairman on Committee of Arrangements.

THE SEVENTH PAN-AMERICAN CONGRESS.

The National Executive Committee of the Seventh Pan-American Medical Congress, which will be held in San Francisco on the seventeenth, eighteenth and nineteenth of June, 1915, in the Exposition Memorial Auditorium, invites all interested to attend and take part in the proceedings. Registration may be made in advance by addressing Dr. H. P. Newman, 501 Timken Building, San Diego, or at the Registration Bureaus, Palace Hotel and Auditorium, at the time of the Congress. Registration fee $5.00.

The local committee of arrangements announces adequate scientific and social entertainment, of which detailed notice will be given to all registering. Any information may be had of the local committee, Harry M. Sherman, chairman.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

LELAND STANFORD JUNIOR UNIVERSITY SCHOOL OF MEDICINE.

To the State Journal of Medicine:

Gentlemen: The following appointments and promotions in the Stanford University Medical School have been made for the year 1915-16:

Dr. Charles Harvey Bailey, formerly connected with the Crocker Research Laboratory, New York City, has been made Assistant Professor of Pathology.

Dr. Henry Augustus Stephenson, formerly Assistant in Obstetrics and Gynecology in the Johns Hopkins Medical School, has been made Assistant Professor of Obstetrics and Gynecology.

Dr. George De Forest Barnett (M. D., Stanford, 1913) and Dr. Jean Redman Oliver (M. D., Stanford, 1914), have been made Instructor in Medicine and Instructor in Pathology, respectively.

Dr. George Dunlap Lyman (M. D., Columbia, 1909), has been made Clinical Instructor in Pediatrics.

Dr. Shadworth Oldham Beasley has been made Clinical Instructor in Obstetrics and Gynecology.

Dr. Hans Barkan has been made Clinical Instructor in Surgery, assigned to Ophthalmology.

Dr. Harvard Y. McNaught has been made Clinical Instructor in Surgery, assigned to Otology, Rhinology and Laryngology.

Dr. Shadworth O. Beasley, Clinical Instructor in Obstetrics and Gynecology, has accepted an appointment as Assistant Surgeon in the American Red Cross Service and has been assigned to Belgrade, Servia.

Very truly yours,
R. L. WILBUR.

NOTICE.

Tacoma, Washington, May 17, 1915.

Chairman Sub-Committee on Transportation A. M. A. Meeting in San Francisco.

Dear Sir:

The members of the Pierce County Medical Society extend a cordial invitation to A. M. A. members attending the San Francisco meeting in special trains or special cars to stop over in Tacoma either coming to or going from San Francisco; if a few days' notice is given we will be glad to take our visitors for a short launch trip on Puget Sound to Point Defiance where a picnic lunch will be served; for those who do not care for the water trip automobile rides about the city and to the park—for the same luncheon.

If word is sent in advance, arrangements and reservations can be made for those who wish to take the trip, either by rail or automobile, to the Ranier National Park and Mt. Tacoma; the railway fare is $5.00, or if preferred to make the trip by automobile, the round trip rates are $6.00 to the inn, $7.00 to the foot of the glacier, and $8.00 to Paradise Valley, i. e., the line of perpetual snow. The trip by train takes a part of each of two days; by automobile round trip can easily be made in one day and it is well worth while.

Yours truly, JAMES R. YOCOM,
Chairman Committee on A. M. A. Entertainment, Tacoma, Wash.

BOOK REVIEWS

An Epitome of Pediatrics. By Henry Enos Tuley, A. B., M. D., Late Professor of Obstetrics, Medical Department, University of Louisville; Editor Louisville Monthly Journal of Medicine

and Surgery; Late Chairman of Section Diseases of Children, American Medical Association; Ex-President American Association Medical Milk Commissions, etc. New (2d) edition, revised and enlarged. 12mo, 324 pages. Cloth, $1.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914. (Lea's Series of Medical Epitomes.)

This small book is one of a series of medical epitomes gotten out by Lea & Febiger. Personally, the reviewer is very much opposed to this type of book in medicine, especially for the student, as it encourages the so-called system of cramming rather than that of careful reading. From the standpoint of the practitioner, however, there may be an excuse for such a book for rapid reference to a subject. There is, of course, nothing new nor original in the book, the author distinctly says it is an epitome and not a text book, and within these limits the author has handled his material well. It would seem that if references to the articles which cover various subjects thoroughly could have been given it would have increased the value of the book considerably. It can only be recommended as a short cut to knowledge and such things are dangerous unless they are in the right hands. In the right hands they may have some value. W. P. L.

Child Training as an Exact Science. By George W. Jacoby, M. D. With full bibliography and thorough index. 384 pages, 15 full-page illustrations. $1.50 net; by mail, $1.62 Funk and Wagnalls Company, Publishers, New York.

This treatise, which is based on the principles of modern psychology, both normal and abnormal, should be read by everyone interested in modern conceptions of the mental development of the child. We are rapidly getting away from the stereotyped principle in pedagogy of treating all children alike. The variability of the individual child is becoming an important feature in pedagogy as well as medicine. Jacoby is well qualified to bring forward not only the psychological but also the pedagogical development of children.

After giving a short historical survey in which fitting tribute is paid to Edouard Seguin and Mme. Montessori, he gives a short résumé of modern principles: the development of the brain and the central nervous system of the child. After dealing with the mental capacity for development as demonstrated by experimental psychology, he goes on to the organic defects or psychic abnormalities of childhood, then to the functional disorders, and finally concludes with the principles underlying therapeutic training of the child. The following quotation from his conclusion very well represents the fair mindedness with which he has developed the subject of child training: "The present day development of pedagogy, as well as of medicine and other sciences, has shown that nothing is so difficult as to free ourselves from the prejudices which obscure our vision and give all our observations a false aspect." This is a book which should be read by every parent, teacher and physician. W. P. L.

Abdominal Operations. By Sir Berkeley Moynihan, M. S. (London) F. R. C. S., Leeds, England. Third edition, entirely reset and enlarged. Two octavo volumes totaling 980 pages, with 371 illustrations, five in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, $10 net; half morocco, $13 net.

There are some books which it may be audacious to praise and needless to call to public attention;—one of them is this masterwork of a leader in abdominal surgery.

It is characterized, like others of Moynihan's writings, by brevity, clearness, and precision. It is complete enough to be a real help, and consistent and apposite enough to make every word of value. It contains not only excellent and well illustrated technical descriptions, but also discussion of the author's views on indications for operation, notes on his cases, and exposition of his clinical ideas. It is necessary for every operating surgeon to have read and studied it; it is not less invaluable to the internist, for, as Osler says, it is largely the surgeons who have made possible modern knowledge of the functions, physiological and pathological, of the digestive tract. And foremost among these pioneers in "The Pathology of the Living" stands Moynihan.

Some of his statements will not be accepted without controversy in America and on the continent. His advocacy of purging (p. 72 and 125, Vol. 1) and "milking" the gut (p. 408, Vol. 1, and p. 105, Vol. 2) in peritonitis, his use of paraffin in the abdomen to avoid adhesions (p. 135, Vol. 1), his statement that in opening the abdomen "muscular fibres are always to be separated, never to be cut" (p. 105, Vol. 1) may be cited as examples. In the chapters on injuries to the solid viscera one misses mention of methods of arresting hemorrhage by tamponade with grafts of fascia, fat or omentum.

The chapters on the stomach, duodenum, and bile passages stand out pre-eminent among the contents of this admirable work. L. E.

Differential Diagnosis. Presented through an analysis of 317 cases. By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine Harvard Medical School. Octavo of 709 pages, 254 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.50; half morocco, $7.00.

The large number for whom Dr. Cabot's Differential Diagnosis has combined to an unusual degree, instruction with fascinating interest, will welcome a second volume on exactly the same plan. As before, various "leading symptoms" as diarrhea, hemoptysis, fainting, etc., have been illustrated by a series of cases from the Massachusetts General Hospital. Each case is carefully described and analyzed, with autopsy or operation reports or other data as to outcome appended. To each chapter is prefaced a general discussion of the symptoms under consideration written in Dr. Cabot's breezy style, and very useful tables as to frequency of the various causes for the condition. This book, like all Dr. Cabot's writings, exhibits his destructive attitude toward grizzled doctrines not sufficiently supported by proof, and as has occurred before, some will take umbrage when their cherished beliefs are thus made light of. As in the previous volume there will be many of the author's opinions and diagnoses to which the reader will not agree, but this very element of uncertainty is the characteristic of medical practice which makes it the most fascinating game there is. If the reader were to draw from the book only the lesson that dogma and certainty are impossible in medical practice, he will be fully repaid. The book is profusely illustrated with diagrams and charts of various kinds. J. L. W.

Dietetics: or Food in Health and Disease. By William Tibbles, L.L.D., M.D., L.R.C.P., M.R.C.S., L. S. A. Medical Officer of Health, Fellow of the Royal Institute of Public Health, etc. Octavo, 627 pages. Cloth, $4.00 net. Lea & Febiger, publishers, Philadelphia and New York, 1914.

This book dealing with food in health and disease, with the author's previous work on "Foods": their origin, composition and manufacture, forms a complete system of dietetics.

The author calls attention to the great amount

of time given the study of animal and plant foods in all agricultural colleges, whereas the average medical school and the average physician greatly neglect the study, the practical application of which "could benefit 50% of the physicians' clients when they are sick, and is no less important as a branch of preventive medicine."

The book is thoroughly up to date. It adequately covers the question of digestion, absorption and metabolism, as well as the caloric value of foods and the study of food requirements at various ages. The study of the mineral requirements of the human body is also given the consideration it deserves.

Recent work on the enzymes, lipoids, salts and vitamines is discussed, with its importance in the study of the so-called deficiency diseases.

The chapters on diet in disease are not only instructive but stimulating. They are a bit lengthy perhaps, but their contents are all "meat." They give enough physiology, pathology, etc., as to render the discussions on rational treatment very easy to follow.

The book is very well written. The typography is worthy of praise, heavy typing, italics, diagrams and tables being so well distributed as to render reading enjoyable.

References are given, especially to all newer articles so that the book is one that can be well recommended to teachers and students as well as to practitioners.

Diabetes Mellitus. Nellis B. Foster. Lippincott Co., Philadelphia and New York. 1915.

This is a fine book, but that it will be a widely useful one is doubtful. Much the better part is the one concerned with the presentation of a short summary of the present position of experimental research into the metabolic problems of diabetes. It is a very good summary, but so condensed that it will be very difficult reading for anyone not concerned at first hand with these matters. For this reason it will probably not mean much to the type of clinician mentioned in the preface for whom the book is particularly intended, the clinician who does not read journals devoted to physiology and chemistry. On the other hand all clinicians worthy of the name who are specially interested in the treatment of diabetes are obliged to keep posted on experimental work because it often has such a direct relation to the management of their patients. To them the book will be interesting but not indispensable. A much fuller and very able review of the literature has recently been published. It is satisfactory to see that Foster gives short shift to the polyglandular theory of diabetes which has complicated and obscured so many discussions on diabetes. He decides clearly against the possibility of the formation of any considerable amount of sugar from fat. In discussing the subject of acidosis he attributes the discovery that neutralized oxybutyric acid had a considerable toxicity to Ehrmann, but R. L. Wilbur published experiments in this connection some years before Ehrmann's paper appeared. He is very orthodox in his chapter on treatment, but there is a significant footnote in which he states that several years ago he observed a decrease of acidosis with the use of very meager rigid diets, and has employed that method since, "although it is against ideas commonly taught." T. A.

A Treatise on Diseases of the Rectum and Anus. Edited by A. B. Cooke, A.M., M.D. Assisted by W. M. Beach, J. C. Brick, G. B. Evans, A. B. Graham, G. S. Hanes, L. J. Krouse, C. F. Martin, F. C. Yeomans, A. J. Zobel. 215 illustrations in the text and 21 full-page plates, 7 in colors, 8 vo. Publisher, F. A. Davis, Philadelphia, 1914. Price, $5.50, cloth.

Dr. Cooke, assisted by the well-known rectal surgeons Doctors Beach, Hanes, Evans, Graham, Krouse, Martin, Yeomans, Brick and Zobel, has produced a very readable book that is destined to become very popular with the medical profession. Dr. Cooke has written the first sixteen of the thirty chapters in the book and his collaborators have contributed the remaining fourteen, each writing on a subject to which he has given particular attention or in which he has had special experience: such as the chapter on "Local Anesthesia in Ano-Rectal Surgery" by Dr. Zobel; the chapter on "Relation of Rectal Diseases to General Health" by Dr. Hanes, and the chapter on "Reflexes and Neuroses of the Rectum and Anus" by Dr. Martin—all very excellent.

The chapters by Dr. Cooke are interestingly written and to the point and the subjects generally well handled, though under Prolapse I miss any mention of the method of cure by obliteration of the Pouch of Douglas in women and the corresponding pouch in men, an operation that has been tested and found to fulfil all expectations by Moskowitz of New York.

Taken as a whole Dr. Cooke's book ranks well with any that have appeared in recent years; and despite the number of collaborators, preserves an evenness and harmony that is due to the fact that the contributors are entirely in accord in essential facts, being thoroughly acquainted with each other's work. A. N.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume IV, number II (April, 1915). Octavo of 197 pages, 47 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published bimonthly. Price per year: Paper, $8.00; cloth, $12.00.

Contents.

Murphy's Clinical Talks on Surgical and General Diagnosis.

Bony Lipping of the Right Acetabular Margin and of the Neck of the Femur Following Metastatic Arthritis,—Arthroplasty of the Hip.—Cheilotomy.

Carcinoma of the Breast.

Carcinoma of the Colon.—Diffuse Miliary Carcinosis of the Peritoneum.—Exploratory Operation.

Epithelioma of the Upper Lip Starting in an Old Lupus Scar.—Excision, Plastic Closure.

Intramural Fibroid of the Uterus.—Diagnosis.—Hysterectomy.

Hypertrophy of the Prostate.—Urinary Retention and Self-Catheterization.—Cystitis, Periprostatitis, with Multiple Abscess and Fistula Formation.—Perineal Prostatectomy.

Spontaneous Massive Coagulation of Cerebrospinal Fluid with Xanthochromia.—Its Significance in the Diagnosis of Lesions of the Spinal Cord and Its Membranes.

The Tonsils. By Harry A. Barnes, M. D. Published by C. V. Mosby Co., St. Louis. 1914.

This book is the best exposition of the modern thought concerning the tonsils and the tonsillar region that has yet appeared. The author has given a clear-cut, concise view of the embryological development of the tonsils and their pillars, and has been very successful in showing the influence this development has had on the types of tonsils and the pathology of late life. The cuts in the book are well selected and show a great deal of hard research work on the part of the author and his assistants. The short chapter on the relation of the tonsils to systemic infections shows a thorough familiarity with the bacteriology of the subject that has been so thoroughly worked out by modern workers. His operative technic is simple and follows the accepted methods. On the whole, the book reflects a judicial mind free of bias and fadisms and should be well received. H. B. G.

The Commoner Diseases: Their Causes and Effects. By Dr. Leonhard Jores, Professor Der Allgemeinen Pathologie Und Pathologischen Anatomie An Der Universität Marburg. Authorized English Translation by William H. Woglom, M.D., Assistant Professor in Columbia University, assigned to cancer research; Assistant Pathologist to St. Luke's Hospital, New York City. Eight Vo. cloth, pp. 424, with 250 figures in the text. Price $4.00 net. 1915. Publishers J. B. Lippincott Co., Philadelphia and London.

This work consists of a series of lectures delivered by the author to his students. The writer discusses without going into great detail, the etiology, complications and sequelae of the more frequent lesions together with, in most cases, a short description of the macroscopic and microscopic pathology.

Though diseases such as Tuberculosis and Carcinoma are presented more or less fully, an important subject such as Syphilis receives only a very brief outline.

The discussion of the various modern etiologic theories is a commendable feature.

The book is copiously illustrated and furnishes easy reading, especially to the student beginning his pathological studies and desirous of gaining a preliminary outline of the subject. C. S.

Principles of Hygiene: For Students, Physicians, and Health Officers. By D. H. Bergey, M.D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fifth edition thoroughly revised. Octavo of 531 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $3.00 net.

This manual has been thoroughly revised according to the advances made in the large number of subjects included in general hygiene. Two distinctive features of the book are the consistent use of the metric system, which to a degree lessens its value as a practical manual designed for students and practitioners of medicine, health officers and architects, since the French system is not in general use amongst these professions: and the inclusion of the Laws Governing Federal Quarantine Regulations and Practice. The author incorporates extracts from the reports of boards of specialists, without explanation or analysis, as in the chapter on Water and Sewage Analysis, in which the subject of the analysis of water and sewage is treated by extracting the report of the Section of Bacteriology and Chemistry of the American Public Health Association. The tabulation on page 376, including the mode of dissemination of scarlet fever and measles by the desquamations is questionable, in the light of recent observations. Several subjects are treated with less degree of thoroughness than is consistent even with a manual, as for example the chapter on soil includes nothing on the subject of soil pollution and hook-worm disease; that on vital causes of disease treats very superficially the prophylaxis of some of the infectious diseases. The value of the book is that of a modern compendium.

N. E. W.

"The Tuberculosis Nurse." Her Function and Qualification. By Ellen N. La Motte, R.N., former Nurse-in-Chief of the Tuberculosis Division, Health Department of Baltimore. Pub. by G. P. Putnam's Sons, N. Y. and London. 1915. Price, $1.50.

This book is very timely since it brings into concrete form, the work which the visiting nurse has been doing to prevent tuberculosis, and some new suggestions as to what scope her duty in the future should take.

After dwelling in perhaps too great length, upon the qualifications of the Tuberculosis nurse, the author very ably in several chapters takes up the question of home disinfection and the instruction to the patient in the home. The Tuberculosis Dispensary is given an important place, it being the agent for diagnosis and for putting the nurse in the important position of carrying out the doctor's instructions and working hand in glove with him.

A rather severe stricture is put upon the medical profession, or rather upon the greater portion of it, who handle this disease without sufficient knowledge to properly diagnose it in its incipiency, or after diagnosis, to properly instruct the patient in the general tenets of prevention not only so far as he himself is concerned, but in regard to his neighbor and his family. In fact, the author strongly advocates the Municipal control of all cases, not only on account of the nature of the disease, but also because the physician who has the sanction of the State is not always equipped to handle this disease.

Inasmuch as this book takes up practically every phase of the relation of the tuberculosis nurse to the patient, the dispensary, the hospital, the home and the sanitarium, it would be impossible in a short review to analyze it at length. The book seems to be mainly an appeal for the municipal control of tuberculosis and the importance of the tuberculosis nurse in the great movement for the prevention of tuberculosis. The book is radical and will without question meet opposition; but it is carefully prepared and full of suggestions. The author is to be highly commended for bringing this very important subject to the notice of the public and to the medical profession in particular.

W. C. V.

Diseases of the Rectum and Colon. By Jerome M. Lynch, M. D. Published by Lea & Febiger, Philadelphia. 1914. Price $5.00.

Since Tuttle wrote his classical work on Diseases of the Anus, Rectum, and Pelvic Colon there have been published a number of very good treatises on the subject by various authors. Among the latest is that of Dr. Jerome M. Lynch, Professor of Rectal and Intestinal Surgery in the New York Polyclinic, who for many years was associated with Dr. James P. Tuttle in that institution, and who, upon the latter's death, became his successor.

It has always been greatly regretted by those interested in proctology that Dr. Tuttle's failing health prevented him from revising his book and giving the invaluable experiences of the last few years of his life. It was especially regretted that he did not associate Dr. Lynch with himself in making such a revision.

The advent of a work by Dr. Lynch was therefore looked forward to with much interest, as the conclusion was that it would be one which, taken in connection with Tuttle's, would be the last word on the subject. In this, one is not disappointed. A perusal of the contents shows that Dr. Lynch has been most happily successful in his efforts.

The book is excellently written and gives every evidence of much patient care; is well printed and illustrated, and is devoid of much that the average reader considers only padding of no particular interest except to those especially interested in the subject.

The author has drawn freely upon his large experience in the surgery of the rectum and colon, and has given only that which he has found to be of the most value.

That there is a continually growing interest in the study of diseases of the anus, rectum and colon is evidenced by the fact that within the past few months, besides Lynch's book, there have appeared two others: one by Mr. P. Lockhart Mummery, of London, Eng., and one by Dr. A. B. Cooke, assisted by nine Fellows of the American Proctologic Society. A. J. Z.

BOOKS FOR SALE.

The following books are for sale by the widow of a recently deceased physician. Address Mrs. H. G. Plymire, 1510 Fifth avenue, Oakland, Calif.:

Medicine, Hare, 3 vols., 1905; Diagnostic Methods, Webster, 1909; Genito-Urinary Diseases, Gaspers, 1909; 12th Edition Therapeutics, Materia Medica. Pharmacy, Potter, 1912; Pathology, Coplin, 1911; Surgery, Spencer & Gask, 1910; Surgery, Binnie, 1911; 2 vols. Urology, Guiteras, 1912; Skin, Jackson, 1899; Surgical Therapeutics, Lanphear, 1907; 10 vols. Practice of Medicine, Series; Othology, Bacon; Hernia, Murry; 2 vols. Medicine, Strumpell, 1911; Anus, Rectum, Pelvic Colon, Tuttle, 1907; Preparatory and After Treatment in Operative Cases, Haubald, 1910; Medicine, 8th edition, Osler, 1912; Obstetrics, Williams; Internal Diseases, Forchheimer 1 vol., 1907; Diagnosis and Treatment of Diseases, Caille, 1905; Internal Medicine, Butler, 1907; Infancy and Childhood, Holt, 1911; Minor Surgery, Foote, 1907; Clinical Symptomatology, Pick, Heck, Koessler, 1911; Chemical and Microscopical Diagnosis, Wood, 1909; Tuberculosis, Klebs, 1909; Vitality, Fasting and Nutrition, Carrington, 1908; 8 vols. Surgery, Bryant and Buck, 1908; 3 vols. Surgical Diagnosis, Johnson, 1909; Modern Clinical Medicine (Appeltons), 4 vols., 1906; Electricity in X-Ray and Therapeutics, Monell, no number; Nervous System, Bailey, 1906; Pathology, Stengel, 1898; Pathology Technique, Mallory and Wright, 1904; Physiology, Foster—very old book; Diseases of Women, Skene, 1897; Gynecology, Kelley, 2 vols., 1908; Forensic Medicine and Toxicology, 1895; Surgery, Park—7—1901; Midwifery, Playfair; Medicine, Osler, 1898; Fractures, Beck; Anatomy, Cunningham, 1905; Hygiene, Rohe; Dermatology, Pusey, 1907; 2 vols. Medicine, Dieulapoy, no date; 4 vols. Internal Diseases, 1914, Billings; Materia Medica, Potter, 1890; Fractures, Scudder, 1901; Obstetrics, King, 1886; Modern Surgery, Acosta, 1898.

Edema and Nephritis. Martin H. Fischer, 1915. John Wiley & Sons, New York.

Fischer is convinced that the living body tissues react to changes in their environment in a manner which is analogous to the behavior of colloids such as fibrin and gelatine. His book is a presentation of this thesis, and the phenomena of edema and nephritis are discussed and explained on the basis of this hypothesis.

The book is cleverly written and would be convincing if all disturbing physiological and pathological facts could be eliminated from the reader's memory. It is stimulating, but probably not in the direction intended. The average reader will not be inclined to follow Fischer's advice to test the validity of his hypothesis by experiments on patients, but he will be stimulated to examine into the basis of his argument. In so far as the book succeeds in accomplishing this, it will have done a service to medicine, for there can be no doubt that colloid phenomena are very important factors in the cell metabolism, factors which have been necessarily neglected in the past because of our want of knowledge of these processes even as they occur outside of the body.

A cursory review of the known facts in colloid chemistry will convince anyone that they lack the simplicity which is apparent in Fischer's presentation of them. It will be found that there are very wide differences in the behavior of the same colloid under the same experimental conditions, and that the greatest difficulty is found in obtaining concordant results. This arises from the instability of colloidal solutions, and makes it very unsafe to generalize. Young (Infection and Resistance. Zinsser 1914) closes a short review of the relation of colloidal phenomena to biological processes with the following remarks: "What is now greatly needed is more data on a greater variety of colloids than have heretofore been investigated and work directed toward the preparation of colloidal solutions of definite character. Until something has been accomplished in these directions all biological analogies and the like cannot be anything more than qualitative, and the same holds true for many of the physical and chemical conclusions which have been discussed in this chapter."

Fischer in his discussion of theories other than his own shows a great capacity for trenchant criticism, and it is therefore to be regretted that he does not apply the same critical faculty in the interpretation of his own results. A glance through recent literature will show that those who are engaged in experiments similar to those he details are much more conservative than he is in drawing analogies. The following conclusions are taken from three recent papers. It is to be noted that these workers are fully in sympathy with Fischer's endeavor to apply the facts of colloid chemistry in the interpretation of biological processes.

Ehrenberg (Arch. f. die ges. Physiol., 1913, 153, 1), concludes that when living muscle tissue is immersed in various salt solutions, the changes can be explained on osmotic but not on colloidal principles. It is only when the tissue dies that it behaves like a colloid. Kidney tissue changes under the same conditions cannot be explained fully either on a purely osmotic or on a purely colloidal hypothesis. It is necessary to assume a "Tätigkeit" in regard to the mechanism of which we as yet know nothing.

Siebeck (Arch. f. die ges. Physiol., 1912, 148, 443), finds that qualitatively living kidney tissue in various salt solutions acts as does an osmotic cell, but the changes are not quantitatively the same, for the changes produced are only about one-fourth the magnitude of those occurring in an osmotic cell. He finds that changes in reaction have no effect on the kidney while it is alive, but when it is dead the tissue alters in weight in acid and alkaline solutions independently of the osmotic pressure. Finally, he concludes that no analogy is possible between colloid phenomena and the behavior of living kidney tissue, and he cites experiments which directly controvert those of Fischer's.

Hess and Müller (Zeit. f. exper. Path. u. Ther., 1914, 17, 59), say: "Wenn Martin Fischer's geistvoller Versuch, die ganze Oedemfrage von einer ähnlichen Gesichtspunkte aus schematisch zu lösen, als gescheitert angesehen werden wird, so weisen doch seine und Reichardt's Untersuchungen einen neuen Weg, der gangbar und hoffnungsvoll erscheint."

It is noteworthy that the first two authors definitely conclude that the reactions of dead tissue are qualitatively as well as quantitatively different from those of living tissue. This goes to the root of the whole question, and stands in direct opposition to Fischer's method of arguing from the behavior of gelatine plates and solutions of powdered fibrin, that similar changes occur in the body. Fischer rather contemptuously rejects the possibility of there being any such qualitative difference, without however giving any satisfactory reason.

So much for the theoretical basis of the book. The practical application to the problems of edema and nephritis is very interesting and full of statements which call for criticism, but in order to make this review of reasonable length we shall confine ourselves to Fischer's discussion of nephritis.

Nephritis, he says, is caused by "the abnormal production or accumulation of acid and of substances which in their action upon colloids behave like acid, in the cells of the kidney."

The first evidence he brings forward in support of this statement is the supposed fact that the urine is abnormally acid in nephritis. He

quotes a few estimations of Höber as his authority for this, and refers vaguely to "the scores" (of acidity estimations) "that may be found in any of the larger monographs on nephritis." But as a matter of fact there are no reliable data on the acidity of the urine in nephritis. It must be remembered that it would be just as inaccurate to draw conclusions from the acidity of the urine unless the dietary conditions were known, as it would be to attempt to judge the rate of protein metabolism without knowing the amount of nitrogenous food taken. It is not by any means certain that the urine is unusually acid in nephritis. The reviewer has at present under observation two cases of glomerular nephritis, who excrete a urine neutral to litmus, when on a diet which gives rise to an acid urine with normal people. And this is what might reasonably be expected in any severe kidney lesion, since the secretion of an acid urine from neutral blood is due to work on the part of the kidney, which it may not be able to accomplish when diseased.

Fischer makes a good deal of the value of changes in the acidity of the urine as a guide to diagnosis and prognosis in nephritis. So it is all the more remarkable that in the twenty clinical cases of nephritis presented that the acidity of the urine is mentioned in only four and then in the most perfunctory manner and with no details as to the diet, or even as to whether the specimen examined was from a 24-hours' collection or not. The urine is said to be "acid," "intensely acid," or "acid to paranitrophenol" before treatment by alkalies, while one case is detailed in whom the urine was acid to methylorange after sodium carbonate had been injected intravenously.

A second point brought forward to support the conception of nephritis as due to increased acidity is the high absolute and relative amount of ammonia in the urine. He states that in generalized nephritis the ammonia will amount to 2, 3, or even 4 grams a day (p. 643). This statement is interesting because it is at complete variance with the facts as given by others, and it is unfortunate that no details of the cases and no other facts of any description are given. Until such details are forthcoming we must continue to believe that in nephritis there is no increase in ammonia excretion.

Von Noorden in Metabolism and Practical Medicine, vol. II, p. 449, in reviewing the literature on this point says: "The subjects of renal disease excrete small quantities of ammonia" (on a diet poor in protein) "and on a varied dietary normal quantities of ammonia." "This is equally true of all forms of nephritis."

The third point is that all these conditions which are known to produce nephritis or at least albuminuria, such as interference with the circulation of the kidney, uranium, lead, etc., do so because they lead to the production of acid in the kidney or in the body. This seems, however, to be a mere assumption. If an albuminuria is produced by clamping the renal artery, it would seem rather begging the question to suppose that the acids, if any, produced under these conditions are the direct cause. There are many other possible disturbances in cell metabolism which might be responsible.

Fischer then deals with the question of albuminuria and comes to the conclusion that the albumen in the urine is derived from the solution of the kidney tissue protein, apparently mainly because fibrin will dissolve in acid solutions. It may be stated in passing that it must be obvious to Fischer that the concentration of H ions used in these experiments is enormously greater than any which can exist in the body fluids. But this does not deter him from drawing an analogy between fibrin solution in hydrochloric acid and albuminuria in nephritis, and then tacitly arguing back and implying that because of the fact that there is an albuminuria, there must be an acidosis in the kidney. He then closes the argument by a discussion of the morphological changes in nephritis, which he considers may be reproduced by the action of acids on kidney tissue.

In the next section he takes up the "alleged consequences of kidney disease," and there is much that is sensible and to the point in his discussion of the relation of vascular disease to nephritis, but here again he shows a want of balance, and a tendency to neglect to mention facts which do not fit into his scheme. He states, for instance, very dogmatically that reduction in the amount of kidney tissue does not induce cardiac hypertrophy, and he shows photographs of animals who have had all but ¼ to ⅛ of their kidney tissue removed. But how are we to tell whether their hearts are hypertrophied or not? Certainly not from the photographs. Has Fischer never heard of the analogous experiments of Heinike and Passler, who produced cardiac hypertrophy in this way?

Uremia is very simply explained by Fischer. It seems perfectly obvious to him that it is only an edema of the central nervous system produced by the swelling of the colloids under the influence of acids. It has nothing to do directly with nephritis. In the uremia of so-called chronic interstitial nephritis there is no kidney insufficiency. It is due to acidosis of the brain from insufficient oxygen supply because of vascular disease. The defective elimination of phenol sulphuruphthalein in this type of uremia is easily passed by with the remark that this requires to be "restudied." The accumulation of non-protein nitrogen in the blood does not seem to be sufficiently important for mention.

There is a short historical review of theories of kidney secretion. Even at the risk of seeming hypercritical, it is worth while to remark that it is not justifiable to couple Bowman's name with Ludwig's as jointly responsible for the filtration theory. This is not a serious error because it is so obvious, but close to it on p. 507 and p. 508 is a more subtle but dangerous mistake, since it amounts to a misrepresentation of some very important work.

Fischer says: "To render secretion possible we must first of all supply the kidney with oxygen. In the process of water secretion by the kidney the oxygen is not only used up but carbonic acid is produced, and the loss of one and the production of the other run the higher, the greater the amount of water secreted by the kidney." He refers to the work of Barcroft and Brodie in making this statement. The impression left on the mind is that the secretion of water is accomplished by means of work on the part of the kidney, and this implication supports Fischer's theory of the primary importance of water excretion, the excretion of solid substances being nearly secondary. On this, in part, he bases his preference of the diuresis following the administration of water as a test of kidney function, and his statement that no insufficiency of function is possible while water excretion is intact (p. 628).

But if the two papers he refers to are consulted it will be found that Barcroft and Brodie find that, though diuresis is accompanied by an increase in oxygen consumption, there is no direct proportion between the oxygen used up and the amount of urine excreted, and in the second paper that the diuresis produced by urea and sodium sulphate is accompanied by a great increase in oxygen consumption.

Fischer's presentation of the essence of this work is not justified by the papers he quotes and is in direct contradiction to the further development of research along these lines. Later it was shown very clearly that it was possible to obtain a great increase in water excretion by the kidney by sodium chloride injections, without any increased

consumption of oxygen, whereas a much smaller increase of urine caused by urea or sodium sulphate produced a great increase in the amount of oxygen used. The excretion of a watery urine isotonic with the blood is not associated with evidences of chemical work.

It is very much to be hoped that in future editions this false impression of the results of Barcroft's work be corrected, since they form, as Fischer himself says, one of the "few experimentally well-established facts" on this subject. In Section IX Fischer enters on the "experimental foundations for the treatment of nephritis." These consist of experiments which are believed to show that the injection of hypertonic sodium chloride solution, or mixtures of various salts in greater concentration than they occur in the blood, is beneficial in nephritis. He shows that the albuminuria and cylinduria which appears when rabbits are tied "snugly" into a holder, or when acid is injected into the blood, or when the renal vessels are temporarily closed, disappears or diminishes when salt solution is injected.

But this "foundation" does not seem to be very firm. By means of the hypertonic salt solution a very pronounced diuresis is produced, and the volume of the urine increases to more than ten times its previous level. Of course the intensity of qualitative albumen tests diminishes and casts become difficult to find. It may be further noted that in the so-called "asphyxial nephritis" produced by tying rabbits on to a holder, all the controls recovered, while of the four injected with salt one died, and that both the animals, into whom salt as well as acid were injected, died. This does not seem a very good foundation for a proposed method of treatment.

In the following section he proceeds to the treatment of nephritis. As regards diet he says: "Practically expressed, I let the nephritic eat pretty much as he pleases." He gives enough alkali to keep the urine neutral to litmus, plenty of salt, and plenty of water. In severe cases he advises the intravenous injection of a solution of sodium carbonate and sodium chloride.

It is to be hoped that no clinician will be so carried away by the brilliancy of Fischer's arguments that he will apply his methods to the usual cases of nephritis he meets in his practice. He should remember that Fischer does not believe that a patient with uremia arising during the course of a chronic kidney disease associated with high blood pressure is suffering primarily from kidney insufficiency. Apparently in such cases he does not recommend intravenous alkaline injections, for there is no such case mentioned among his clinical cases, although it is difficult to understand why not, for he says that uremia also is due to acid accumulation.

The best advice that can be given anyone who feels tempted to try Fischer's treatment is to read carefully and critically the case reports he cites. He will find two cases of post-operative anuria, three cases of apparently acute nephritis, two cases diagnosed as chronic parenchymatous nephritis, one obscure case (No. 26) in which no diagnosis seems possible from the facts given, and ten cases of albuminuria and cylinduria associated with pregnancy. One other case diagnosed as one of the "acute nephritis," in which death followed an intravenous injection of hypertonic salt solution and sodium carbonate, is given. A post-mortem examination was obtained and the following description of the condition found in the kidneys is characteristic of the character of these reports: "The kidneys were somewhat swollen and of good color. The capsules stripped easily"!

It is surely within the bounds of moderation to say that such vague and slipshod summaries as are presented here are far from convincing. The mere fact that a diuresis may be induced in some patients who have albumen and casts in their urine by intravenous injection of hypertonic salt solutions, is no proof that they were necessarily benefited thereby. Nor is the decrease in the intensity of albumen reactions and in the number of casts remarkable when the urine becomes very dilute. The subsequent recovery which occurred is frequently seen without any such treatment. It is possible he is right that in an acute nephritis such treatment is beneficial; but the better way to settle the question would surely be to produce an acute experimental nephritis in animals by uranium, for instance, which he specifically mentions as acting by leading to an acid accumulation in the kidneys, and to try the effect of his injections on them. He could then bring forward objective proof of the presence of an acute kidney lesion, and leave no doubt in his reader's mind as to the accuracy of his diagnosis, a doubt which certainly remains after reading his clinical reports.

If this book were not clever and interesting, if it did not contain many sound and true remarks, it would not be worth reviewing. It is because it is presented in such a forcible and compelling manner that it requires close criticism. It has all the charm of the new and unorthodox, but the new is not always true, and facts, however old, are still facts. THOMAS ADDIS.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Standard Radium Solution for Bathing.—A 5.2 per cent. barium chloride solution containing radium chloride equivalent to 4.2 micrograms of radium per bottle. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. The barium in the solution is said to have no effect. The contents of a bottle, containing 4.2 microcuries or 10,000 Mache units are used for a bath. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Standard Radium Solution for Drinking.—A solution of 2 micrograms of radium and 1.3 mg. barium chloride per bottle of 60 c.c. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. In view of the small barium content, it is claimed that the psysiologic action of barium may be ignored. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Standard Radium Earth.—A mixture consisting chiefly of silica and small quantities of carnotite, 450 gm. containing 0.45 micrograms of radium in the form of radium sulphate. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. For use the earth is mixed with water and heated for a time. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Standard Radium Compress.—A compress containing 225 gm. of a mixture consisting chiefly of silica and barium sulphate containing radium sulphate equivalent to 15 micrograms of radium. For "Actions and Uses" see the article in New

and Nonofficial Remedies on radium. Being applied wet, it is claimed that the action is partly due to beta and gamma radiation of the radium salt and partly to the radium emanation which is dissolved out by the water. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Items of Interest.

The Quality of Blaud's Pills.—An examination of the various brands of Blaud's Pills supplied by manufacturing houses, made in the A. M. A. Laboratory, refutes the commonly assumed instability of ready made Blaud's pills. On the other hand it is shown that the Blaud's pills on the market are not very reliable as to the amount of iron present, the variation ranging from 77 to 183.2 per cent. of the claimed amount of ferrous carbonate. The different brands also differed widely in their ease of disintegration. The special forms, such as the "nascent" preparations, the "soft mass" pills and the gelatin encapsulated oil suspension, sold as "Frosst's Blaud Capsules," showed no advantage over the ordinary kind (Jour. A. M. A., April 17, 1915, p. 1344).

Lactobacilline Omitted from N. N. R.—The Franco-American Ferment Co. is offering its Lactobacilline preparations direct to the public. The company has distributed circulars in which the public is informed that auto-intoxication is the cause of innumerable ills, that the Bulgarian bacillus is a "wonderful corrective or remedy" for such conditions and that the Lactobacilline products are—by inference—the only reliable products. In view of the action of the Franco-American Ferment Co. and the tendency to cause the public to exaggerate slight ailments into alarming conditions, the Council on Pharmacy and Chemistry has deleted the Lactobacilline products from New and Nonofficial Remedies (Jour. A. M. A., April 17, 1915, p. 1346).

Peacock's Bromides.—A report of the Council on Pharmacy and Chemistry points out that Peacock's Bromides (The Peacock Chemical Co.), said to contain the bromides of potassium, sodium, ammonium, calcium and lithium equivalent to 15 grains of potassium bromide per fluidram, is secret in composition in that the amount of the individual bromides is not stated. The report contradicts the asserted uniformity of the preparation and the claim of superiority. It questions the asserted advantage of a mixture of bromides over a simple bromide solution and holds that, if there were any advantages in prescribing such a mixture of bromides, the physician should regulate their proportions. The report further points out that the therapeutic claims are misleading and not in accordance with modern teachings and practice. Thus while the Peacock company advises the use of bromides in the treatment of epilepsy, the best clinical teaching advises the avoidance of bromides as far as possible (Jour. A. M. A., April 3, 1915, p. 1177).

Chionia.—A report of the Council on Pharmacy and Chemistry discusses the claims made for Chionia (The Peacock Chemical Co.) said to be "A Preparation of Chionanthus Virginica"—a drug which is generally conceded to be worthless and which has been the subject of an unfavorable report of the Council. While claiming Chionia to be a "potent hepatic stimulant" the exploiters appear to appreciate its inefficiency, for it is advised to combine the nostrum with drugs of recognized potency such as the heart tonics and laxatives in passive congestion of the liver, mercurial purge, podophyllin or sodium phosphate in "Biliousness," etc. (Jour. A. M. A., April 3, 1915, p. 1178).

Hagee's Cordial.—The Council on Pharmacy and Chemistry reports that Hagee's Cordial of the Extract of Cod Liver Oil Compound (Katharmon Chemical Co.) has neither the nutritive qualities nor the reconstructive efficacy of cold liver oil and that it is worthless for the conditions for which it is advertised. Recent experiments having shown that cod liver oil, like butter and egg yolk, possesses certain growth-promoting properties not found in some other fats, the promoters of Hagee's Cordial claim these properties of cod liver oil for their extract. The Council has previously expressed the opinion that cod liver oil owes its value in the main or entirely to its fatty constituents. Now the Connecticut Agricultural Experiment Station has demonstrated that the growth-promoting properties of cod liver oil are not to be found in Hagee's Cordial (Jour. A. M. A., April 10, 1915, p. 1262).

Wampole's Preparation.—Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver (H. K. Wampole Co., Inc.) is marketed under a non-quantitative and therefore practically worthless statement of composition. Experiments carried out at the Connecticut Agricultural Experiment Station have demonstrated that the Wampole Preparation, which also contains extract of malt and sugar, does not possess the advantages over ordinary cod liver oil as a source of nutriment, as claimed. Neither did the Wampole preparation appear to possess to any marked degree the reconstructive properties of cod liver oil, butter fat and egg yolk. The Council on Pharmacy and Chemistry held Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver ineligible for New and Nonofficial Remedies because, contrary to claim, it lacks both the nutritive and reconstructive properties of cod liver oil and because it is marketed under an indefinite name and under unwarranted claims (Jour. A. M. A., April 10, 1915, p. 1262).

Veracolate.—The Council on Pharmacy and Chemistry reports that "Veracolate (plain)" (The Marcy Co., Boston, Mass.) is semi-secret in composition, unscientific in combination and exploited under unwarranted claims. It reports that the same criticisms apply to "Veracolate with Pepsin and Pancreatin" and "Veracolate with Iron, Quinine and Strychnine." For "Veracolate (plain)" the following non-quantitative formula is given: "A compound containing the bile acids, sodium glycocholate, sodium taurocholate with cascara sagrada and phenolphthalein." "Veracolate with Pepsin and Pancreatin" is said to contain, in addition to the indefinite "Veracolate," the two mutually incompatible ferments, pepsin and pancreatin, and oil of peppermint. The complexity of "Veracolate with Iron, Quinine and Strychnine" has increased so that this unscientific mixture is claimed to contain seven constituents. These products are discreditable to the medical and pharmaceutical profession alike and their use is against the public good (Jour. A. M. A., April 24, 1915, p. 1440).

ABSTRACT OF OFFICIAL RULINGS UNDER THE NEW FEDERAL NARCOTIC LAW.

Administration, external and internal—Liniments, ointments, or other preparations containing drugs not specifically exempt, used for oral, nasal, aural, ocular, rectal, urethral, or vaginal administration are not in such cases used externally and are therefore not exempt from the provisions of this law.

Attendance (personal), definition of—A physician, dentist, or veterinarian must actually be absent from his office and in personal attendance upon a patient in order to come within the exemption of section 2, paragraph A, of this law.

Charity organizations—Not supported solely by the state, county, or municipality must register and pay the special tax and keep a record of drugs dispensed or distributed.

Consumers obtaining drugs.—A consumer, as such, will not be permitted to register under this law and can only obtain a supply of such drugs through a duly registered physician, dentist, or veterinarian.

Drugs dispensed, record of.—A physician or dentist who administers minute quantities of drugs coming within the scope of this law in his office may keep a record of the date when a stock solution is made and the date when such stock solution is exhausted without keeping a record of the name and address of each patient to whom such drugs are administered. This plan will be allowed, however, only in cases of those physicians and dentists who use minute quantities of these drugs, such as oculists, aurists, and other specialists; but where a physician engaged in a general practice otherwise administers such drugs it will be necessary for him to keep a record of the name and address of the patient, of all drugs dispensed, distributed, or administered in his office, and of such drugs left with a patient to be taken in his absence. Only such drugs as are personally administered by a physician to a patient when away from his office are exempt from record.

Educational institutions.—Any department of a university, college, or other educational institution using drugs coming within the scope of this law must register with the collector of internal revenue and pay the special tax. The dean of each department should sign the application for registry and the order blanks used to obtain a supply of these drugs. Such drugs used in a dental infirmary or laboratory should be recorded in a book kept for that purpose.

Exemption from registration.—Under the act government, state, county, and municipal officers, lawfully engaged in purchasing drugs, etc., specified in the act for the various departments of the Army and Navy, the Public Health Service, and for government, state, territorial, district, county, municipal, or insular hospitals or prisons are held to be exempt under section 1 and paragraph (d) of section 2 from the provisions of the act relating to registry and special tax to purchase and use of such drugs and to the keeping of records of the same. Any such officers, however, engaged in private practice must register, pay special tax and keep the records, and comply with all the requirements of the law and regulations.

Hospitals and sanatoriums must keep a record of drugs dispensed, distributed, or administered therein.

Inventories must be retained on file by person making same and not sent to the collector of internal revenue or the Treasury Department. Such inventories must be sworn to.

Name in full—Meaning.—A physician may sign prescriptions calling for drugs coming within the scope of this law the same as he would sign a check or legal document, i. e., J. H. Smith, John H. Smith, or John Henry Smith.

Nurses, status of.—Not allowed to register and can only have narcotic drugs in their possession under direction of registered physician. Can only obtain supplies of such drugs upon registered physician's prescription and only when nursing patient of such physician.

Partnerships of physicians.—Where two or more physicians, dentists, or veterinary surgeons are in partnership, doing business under a firm name, it is necessary for the firm to be registered, the firm registry number to be indicated in ordering any of the drugs for use in the office practice of the members of the firm, each individual physician, dentist, or veterinary surgeon in such partnership should register and pay the special tax under his own name, if also engaged in private practice.

Physicians, dentists, and veterinarians practicing in more than one district.—If maintaining an office in more than one internal-revenue district must register in each district. If not maintaining more than one office registration in one district permits him to practice in any other district with but one registration.

Prescription blanks.—A physician, dentist, or veterinary surgeon can make use of any prescription blank, provided the same is properly dated and signed and has indicated thereon the physician's address, his registry number, and the name and address of the person for whom such prescription is written. The government does not furnish a form upon which prescriptions may be written and the special order form can not be used for this purpose.

Prescriptions, partial filling of.—Original prescriptions only can be lawfully filled by druggists, and the partial filling of such prescriptions, from time to time, where large quantities of drugs have been prescribed will, under no circumstances, be permitted.

Refilling prescriptions.—Only original prescriptions can be filled by druggists and apothecaries and can not be refilled without violating this law.

Registration, who eligible for.—The following persons legitimately engaged in the practice of their profession and dealers allowed by the state laws to handle narcotic drugs are eligible to registry under this law: Persons engaged in the practice of medicine and surgery, persons engaged in the practice of dentisry, persons engaged in the practice of veterinary medicine and surgery, persons engaged in the importation and sale of drugs, persons engaged in the manufacture and sale of drugs at wholesale, persons engaged in the manufacture and sale of drugs at retail.

An osteopath, therefore, or other person heretofore administering these drugs, if not classed as a physician in the state in which he resides, would not be permitted to register under this law.

Special-tax stamps.—Must be posted in a conspicuous place by every person registering under this law.

DAVID A. GATES,
Acting Commissioner of Internal Revenue.

THE MEDICAL PRACTICE ACT.

(Remarks in the Senate by Mr. F. H. Benson.)

Mr. President: This is the bill presented by the State Board of Medical Examiners. It is what is known as the "regular" or "orthodox" bill, and has the support of some seven thousand medical practitioners who yet cling to the belief that the practice of medicine is a science, and that the care of the human body is a function of sufficient importance to warrant careful regulation by the State. It has the support, too, in spite of the vigorous and misleading propaganda which has been conducted against it, of the overwhelming majority of the citizens of our state, and it is in their interest and for their protection, that the bill is advocated.

It would not seem necessary in an intelligent

gathering to pause in the discussion of a health measure to defend the members of the medical fraternity. It would seem that the wonderful part which the doctor has played in the history of mankind would protect him from promiscuous and vicious attack upon every occasion when he seeks to improve the standards of his high calling. But, unfortunately, such has not been the case. Through the activities of the most numerous and the most persistent lobby which has attended upon this legislature, an atmosphere has been created here in which the family doctor, whom we have long loved and revered, is made to appear as a self-serving opportunist, intent upon obtaining his own personal advantage at all hazards and oblivious of the rights or interests of all mankind.

Is this the doctor as you and I have known him? Has there come a time in your life when the one you held nearest and dearest went down into the valley of the shadow weakly clinging to the hand of your family physician? Have you known what it is to stand by the bedside of the one you loved —impotent, helpless and hopeless, save for your faith in your God and your confidence that the kindly man of medicine who hovered tenderly over her would fight with all of his heart and all of his brain, with all of his acquired skill and all of the skill he had inherited from the thousands who had fought this fight before him? Did you doubt then that the big issue with that now maligned medical man was the life or death of your loved one? Do you remember how through the travail of that long, long night he fought back the grim horror inch by inch, and with the break of dawn the clouds lifted just a little and your loved one came feebly out from the dark valley? Do you remember these things? Did the doctor seem to you then the crooked, selfish opportunist that he is now represented to be? Did he appear to you then as he is visualized to you today in the innuendos, the whispered scandals and the vicious jeers in which the opponents of this measure have so freely indulged?

This bill is presented by the regular physicians in conformity with a course which they have pursued with self-sacrificing and commendable zeal in their efforts to insure the highest degree of skill in those who are to minister to the afflictions and ailments of mankind. It is only a few years ago that the profession of medicine in the United States was at a standard so far below that of European countries that it was a matter of universal regret not only to the members of the profession, but to the intelligent public. It was generally recognized that for a man to become a first-class physician, or surgeon, a course in a European institution was essential. Such a course was impracticable to a sufficient number of medical men to supply the needs of our great population and, as a result, inadequate, inefficient and poorly conducted colleges, operated largely for purely financial ends, sprung up all over the country. These were popularly known as "diploma mills," and their operations not only attracted the attention of the general public, but also elicited the condemnation of the higher minded members of the medical profession. An effort was inaugurated to correct this condition. A propaganda for high standards in medical education was initiated, and the profession throughout the country became actively interested. Laws were passed in state after state which had for their object the abolishing of the "diploma mill," and the discouragement of the "short course" doctor. Probably no more efficient measure of this character has been enacted than the California medical law of 1913, which is the law which we are now seeking, in minor particulars, to amend. This law was largely the result of the earnest, persistent and intelligent efforts of Senator Jones, Senator Avey and Senator Mott, who devoted a large portion of their time during the last session of the California legislature to hearing the views of representatives of various schools of medicine, and in framing a bill which would be fair to every school which honestly desired to meet a proper and adequate standard. In this they were so largely successful that an overwhelming majority of the educated practitioners in the state would not desire to see the bill radically changed.

There is opposition, however, to the measure. An opposition which has manifested itself in the numerous lobby which assails the members of this body at every possible opportunity. This opposition has centered its attack upon the bill in the amendment now presented proposing to deprive the State Board of Medical Examiners of the authority to approve institutions of medical learning before their graduates are allowed to present themselves for examination. It is argued with heat and vehemence that this approval by the Board is unnecessary, because the standards required by the institutions are written in the law; that is—so argue the proponents of this amendment—if the law itself requires an institution to give so many hours of instruction in each of the several essential branches then this requirement of the law should be the sole measure of the institution's eligibility to present its graduates for examination. That is, the standard having been legally established then there is no necessity for any provision authorizing the Board, or any other tribunal, to pass upon the question of whether or not the standard has been duly adhered to.

This opposition seems to me to have been arrived at by a process of reasoning which is extraordinary. If that theory is correct, then the fact that certain standards of conduct are by law written in the Penal Code is all that is necessary to insure the peace and dignity of the commonwealth. Why have policemen, district attorneys, judges and juries? Why should we give to these mere men the right to arbitrarily determine whether or not these rules of conduct have been observed? The standards are written in the law, and, being written in the law, their purposes are accomplished, and nothing further is required to prevent theft and violence than the knowledge that the standards are there so written. The mere statement of this proposition carries conviction of its absurdity. We write our standards of civil conduct in our Penal Code, but we maintain peace officers and the machinery of the courts to see that those standards are observed. We write in the law the standards required for medical colleges, and we give to our Board of Medical Examiners authority to see that these standards are adhered to.

If the standards of conduct written in our Penal Code are violated our courts declare the violation and penalize the offender. If the standards of medical colleges are not adhered to the State Board declares the violation of the standards and penalizes the offender by declining to allow its graduates to appear for examination. The provision seems just, and more than that, it seems necessary.

Senator Purkitt has demanded to know why I am not satisfied to eliminate the provision of the law requiring the approval of these institutions by the Board and leave it to a court of law to determine whether or not an institution has lived up to the legal standard. I will tell you why, Senator Purkitt. The court is not organized in a manner to properly determine the question as to whether or not certain studies are being taught adequately, or effectively, in an institution of learning. The only way of determining whether or not teaching is being properly done is for some one competent to judge to go and watch the teacher at work. Actual inspection by those learned in the branch being taught would bring more certain and satisfactory results than would tomes of testimony taken in court and digested by a lawyer on the bench, or layman in the jury box.

What has your profession and mine done, Senator Purkitt, which would justify the assumption that to it could be more safely left the determination of this question than to the members of the medical profession? What has our profession done that would place it so high above the profession of medicine that we should arrogate to ourselves the right to act as exclusive judges in matters that affect the healing art? Has our profession been so marked by progress and achievement that we are justified is assuming the incompetency of the members of the medical profession to control their own institutions? What achievement, Senator Purkitt, can the profession to which you and I belong point to which can approach the magnitude and magnificence, the heroic and self-sacrificing and tremendously important work of the medical men who gave their lives that the Panama Canal might be a possibility?

I know nothing of the various schools of medicine. The Allopath; the Homeopath; the Eclectic and the Osteopath, all or none of these may be right in their peculiar dogma, but I do know that there is no school, sect or cult in science; that truth, whether it concern medicine or mathematics, will not be confined to any particular or peculiar class or creed.

I believe that the man who is earnestly searching after truth and lends an attentive ear to the wisdom of those who have searched before him is apt to approach nearer to that which he seeks than the man who ignores all researches of the past and insists on building the structure of his knowledge upon the foundation which he has himself laid. The science of medicine, as it is known to the regular practitioner, is a great structure which has been builded up year by year and century by century. It has profited by the achievements and by the errors of the past; it has tried out much that has been found wanting, but in its net results it is a science based upon long and intelligent research, careful and enormously extensive observation; and in its upbuilding the best and most capable men since the world began have been giving the best that was in them.

I cannot judge between the technical theories which may separate the men who are learned in this great science, but I can believe that it is unsafe to assume that the man without educational qualifications of his own, unguided by the experience of others and intolerant and narrow in his attitude, is a safe custodian of the lives and welfare of our citizens; nor can we safely leave the question as to the competency of the contending healers to the supposed beneficiaries of their various arts. I have known men of education and intelligence who loudly asserted that after the physician had failed to cure their ailments they had obtained instant and miraculous relief from a concoction of ground lizard and grasshopper legs, prescribed for them by the Oriental savant. I know a man, for whose ordinary intelligence I have the highest respect, who proudly displays a little black lump which was once a potato, as the potent talisman which for successive seasons has warded off his rheumatism; and to prevent this same malady there are concerns which turn out enormous numbers of German silver rings, which they sell at a large profit to the credulous. It is this credulity and tendency to surround the healing art with superstition which makes it so necessary to protect the public from becoming the prey of the charlatan. This can only be done by the maintenance of high standards for the members of the medical profession. So long as we continue to maintain these standards we may expect that those who fall below them will indulge in bitterness and recrimination; so long as the regular practitioner maintains ideals for his profession and strives to hold his profession up to those ideals, so long may he expect that his motives may be misconstrued and misrepresented.

At every session of the legislature we may expect that there will be persistent and vigorous efforts to tear down the standards which have been established. We may expect to be overwhelmed with stories of the failures of the learned medical profession and be regaled with wonderful stories of the achievements of the unlearned. Unfortunately, this has come to be an old story in the California legislature, and I am confident that this body would rather vote to raise, than to lower, the standard of medical education, and that those who are now complaining most bitterly against the provisions of the law which has operated against them, will, when they have earnestly and honestly attained the standards which have been set, be proud to number themselves among those who are striving to retain for the healing profession the glorious position to which its history, practices and aspirations entitle it.

STANDING OF GRADUATES OF CALIFORNIA MEDICAL SCHOOLS: PASSED AND FAILED.

	1908				1909				1910			
	P.	F.	P. %	F. %	P.	F.	P. %	F. %	P.	F.	P. %	F. %
Univ. of Cal.	15	3	83	16	9	0	100	0	5	0	100	0
Oakland Col. Med.	1	0	100	0	3	0	100	0	3	0	100	0
Cooper Med. Stanford	29	7	80	19	24	4	85	15	17	4	80	19
Coll. of Med. U. So. Cal.	13	14	48	51	27	5	84	15	8	0	100	0
Hahnemann Med. Coll	3	4	42	57	8	6	57	42	4	1	80	20
Coll. P. & S., U. So. Cal.	18	12	60	40	4	10	28	71	16	4	80	20
Coll P. & S., S. F.	6	18	25	75	15	10	60	40	11	9	45	65
Cal. Med. Coll., Eclectic	1	3	25	75	1	1	50	50	3	2	60	40
L. A. Coll. Osteopathy	0	1	0	100	11	5	68	31	32	17	65	34
Pac. Coll. Osteopathy	0	0	0	0	10	9	52	47	14	7	66	33

	1911				1912				1913			
Univ. of Cal.	15	0	100	0	20	0	100	0	11	0	100	0
Oakland Col. Med.	0	0	0	0	6	0	100	0	4	0	100	0
Cooper Med. Stanford	25	2	92	7	30	3	90	9	10	1		
Coll. Med. U. So. Cal.	7	1	87	12	23	3	88	11	3	0	100	0
Hahnemann Med. Coll.	7	0	100	0	3	1	75	25	12	1		
Coll. P. & S., (U. So. Cal.)	1	1	50	50	2	0	100	0	21	1		
Coll. P. & S., S. F.	13	4	76	23	2	4	33	66	4	4	50	50
Cal. Med. Coll., Eclectic	1	1	50	50	0	0	0	0	2	4		
L. A. Coll. Osteopathy	25	27	48	51	38	24	61	38	26	17		
Pac. Coll. Osteopathy	17	10	62	37	8	6	57	42	6	6	50	50

MEDICAL CORPS OF THE UNITED STATES NAVY.

A candidate for appointment in the Medical Corps of the Navy must be a citizen of the United States, between 21 and 30 years of age, a graduate of a reputable school of medicine, and must apply for permission to appear before a Board of Medical Examiners. The application **must be in the handwriting of the applicant,** and must be accompanied by the following certificates:

(a) Letters or certificates from two or more persons of good repute, testifying from personal knowledge to good habits and moral character.

(b) A certificate to the effect that the applicant is a citizen of the United States.

(c) Certificate of preliminary education: The candidate must submit a certificate of graduation from an accepted high school or an acceptable equivalent.

(d) Certificate of medical education: This certificate should give the name of the school and the date of graduation.

(e) If the candidate has had hospital service

or special educational or professional advantages, certificates to this effect, signed by the proper authorities, should also be forwarded.

The applicant will save unnecessary correspondence if he will make sure when submitting his application that the qualifications enumerated above are clearly and plainly described in his letters or certificates.

EXAMINATION OF CANDIDATES FOR ASSISTANT SURGEON—PUBLIC HEALTH SERVICE.

Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, 3 "B" street, S. E., Washington, D. C., and at the Marine Hospitals of Boston, Mass., New York, N. Y., Chicago, Ill., St. Louis, Mo., Louisville, Ky., New Orleans, La., and San Francisco, Cal., on Monday, June 21, 1915, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Candidates must be not less than 5 feet, 4 inches, nor more than 6 feet, 2 inches, in height, with relatively corresponding weights.

The following is the usual order of the examinations: 1, Physical; 2, Oral; 3, Written; 4, Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate and that they will serve wherever assigned to duty.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists of examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital.

The examination usually covers a period of about ten days.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Assistant surgeons receive $2,000, passed assistant surgeons $2,400, surgeons $3,000, senior surgeons $3,500, and assistant surgeon generals $4,000 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to the grade, is allowed.

All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, address "Surgeon-General, Public Health Service, Washington, D. C."

NEW MEMBERS.

Sewall, Chester D., San Francisco.
Fossum, Otto B., Cambria.
Wilmar, Alven H., Paso Robles.
Davis, A. L., San Francisco.
Cummins, W. F., San Francisco.
Converse, Geo. M., San Francisco.
Dolley, F. S., South San Francisco.
Hirschkowitz, Lesser, San Francisco.
Marks, Selby H., San Quentin.
Podstata, S. H., Livermore, Cal.
Allen, Warren V., Oakland, Cal.
Hinman, Frank, San Francisco.
Lisser, Hans, San Francisco.
Marvin, George D., San Francisco.
Waterman, Helen J., Berkeley, Cal.
Petr, Francis, Beaumont.
Farmer, Jessie C., San Francisco.
Saunders, Bertha A., Palo Alto.
Inman, T. G., San Francisco.
Rosencrantz, Esther, San Francisco.
Barnard, R. P., San Francisco.
Cohn, David, San Francisco.
Bybee, Addison, Livermore, Cal.
Shaw, Joseph Hughes, Santa Rosa.
Johnson, Wm. Henry, Santa Rosa.
Juell, N. R. H., Santa Rosa.
Blackshaw, J. B., Sebastopol, Cal.
Hamlin, R. E., Santa Rosa.
Belyea, J. H., Proberta, Cal.
Maggard, W. F., Corning, Cal.
Pringle, T. R., Woodlake, Cal.
Cahen, Caesar George, Los Angeles.
Walters, C. M. C., Los Angeles.
Allen, Edgar Mosher, Los Angeles.
Olds, Wm. Henry, Los Angeles, Cal.
Bowers, Chester Herbert, Los Angeles.
Reed, Edward North, Los Angeles.
Breitling, Carl Adolph, Azusa, Cal.
Saylin, Isaac, Exeter, Cal.
Happell, Jas. McAndrew, Lindsay, Cal.
Fahy, Jas. E., Los Angeles.
McKee, Wm. C., Los Angeles.
Burrows, C. A., Los Angeles.
Mills, Lloyd Hunter, Los Angeles.
Roberts, Ernest Eugene, Sawtelle, Cal.
Boody, Fred'k Joseph, Los Angeles.
Hoag, O. H., Santa Rosa.
Stevens, Chas. Sidney, Santa Barbara.
Cummins, W. T., San Francisco.
Powell, Wm. Arthur, Trinity Center, Cal.
Jones, J. Roy, Yreka, Cal.
Martinez, Lolita B., San Francisco.
Gay, Fred'k P., Berkeley, Cal.
Beckwith, Helen L., Berkeley.
Rea, Thos., Oakland.
Herbert, Gavin Shearer, Santa Paula.
Crawford, John, Santa Paula.
Desrosier, Geo. W., Maxwell, Cal.
Bransford, M. B., Grimes, Cal.

DEATHS.

McCracken, R. E., Oakland.
Claypole, Edith J., Oakland.
Randolph, J. A., Willows, Cal.
Hurlbut, E. T. M., address unknown (died in Yountville, Cal.
Bucknall, M. E., (died in Los Angeles, Cal.)
Langau, Caroline Morrosco (von), died in Chicago, Ill.
Jenks, G. H., Oakland, Cal.
Henry, Joel F., Fruitvale.
Perce, Lewis A., Long Beach, Cal.
Hund, Otto H., San Francisco.
Gale, John A. (in address unknown), died in Los Angeles, Cal.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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Official Register, - - - San Francisco.

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII JULY, 1915 No. 7

SURGEON-GENERAL RUPERT BLUE, PRESIDENT-ELECT OF THE AMERICAN MEDICAL ASSOCIATION.

It is an unusually keen pleasure to announce not alone that General Blue was elected President of the A. M. A., but that the election to that office occurred in San Francisco; and furthermore, that it was an expression of a spontaneous desire to have him at the head of the Association, and not in any way a matter of "medical politics." No more appropriate thing could have happened than for the office to come to him in the city for which he did so much; in the city in which his great idea was born, the idea that alone would mark any man as great—the idea accepted by the world as the ultimate solution of the problem of bubonic plague—building out the rats. The biggest part of Dr. Blue's work in California is not a part of the record; it will never go into official reports or be a part of any government document, but it showed him to be a master diplomat as well as a public health genius, and endeared him to the people of California and of San Francisco. His biggest problem in dealing with the plague situation in San Francisco was to harmonize the many warring elements and bring many men who were unfriendly to each other, into a state of mind wherein they would work for the common cause; and this he did so quietly, so perfectly and so thoroughly, that few people realized what was going on. To those of us who could see and appreciate, the masterly diplomacy of Dr. Blue during the time of the plague fight was nothing short of wonderful. It is just this diplomatic ability, calm judgment, unruffled temper and forceful executive sense that will be of the greatest aid to the Association at the present time in handling the many very important problems on its hands. These are no times in which to have angry, intemperate arguments concerning the problems within our own ranks. In every way and particular, Dr. Blue is in perfect harmony with the policies and the objectives and the practical work of the American Medical Association, and we may rest assured that constructive progress will be made during his administration. He takes office next year at Detroit. General Blue, California, and especially San Francisco, is proud that the Association has honored itself in electing you to become its President.

The place of meeting for 1916 will be Detroit and the time will be the week beginning June 6th.

The other officers elected are as follows: First Vice-President, Albert Vander Veer, N. Y.; Second, G. V. Evans, Ohio; Third, Donald Campbell, Montana; Fourth, Herbert C. Moffitt, San Francisco; Secretary (re-elected), Alex. R. Craig, Chicago; Treasurer, Wm. A. Pusey, Chicago; Trustees, M. L. Harris, W. T. Councilman, Thomas McDavitt—all elected to succeed themselves.

It is impossible to give more information concerning the meetings of last month, in this issue, as it would delay publication too long.

The registered attendance at the San Francisco session was about 2,300.

EDITORIAL NOTES

PHYSICIAN'S RIGHTS.

Many questions are propounded to the Secretary in regard to the rights and duties of physicians and their relations to the public and to their patients. It is singular but nonetheless true, that not alone the lay public generally, but many physicians, seem to think that they are more or less in the nature of "public carriers"; innkeepers, etc.; that they must respond to a call or must treat a sick person if sent for to do so. This is not at all the case. Quite the contrary. Nor is this definite statement merely a matter of opinion as these points have been settled in court and the decisions sustained. It does not matter whether the person sending for a physician is or is not able to pay him a proper compensation; nor does it matter what the circumstances are, the urgency of the call, inability to get another physician, etc. The courts have ruled in one case at least, that even when money was tendered, no other physician could be reached in time and the patient died as the result of a physician's flat refusal, without stated reason, to visit and treat or prescribe for this sick person, the physician was in no way liable and the suit against him was dismissed. Any physician may elect whether or not he will undertake to exercise his professional ability and accept the offered employment in any given case. No one and no law compel him to extend his professional services, either with or without compensation, unless he wishes to do so.

PATIENT'S RIGHTS.

A physician having accepted a call to attend a sick or injured person is, however, in a different case. His acceptance of the call and his treating the patient are taken by the courts to mean the undertaking of an implied contract based on ordinary reason and common justice. The physician, by accepting the call, indicates that he holds himself out to have ordinary skill in his profession. The law does not expect every physician to have unusual ability; merely ordinary skill and ability of the general average of others in a like calling in his vicinity or a similar one. Furthermore, the physician undertakes to make a proper number of visits and to see that his best judgment guides him in making visits and in the time of dismissing his patient. Some of these points are well brought out in the instructions given by the court to the jury, and later sustained by the supreme court of that state, in a suit based upon alleged negligence in one of the common cases of fracture of the arm. The plaintiff patient claimed that the physician took off the dressings and dismissed him before he should properly have done so, which contention was not agreed to by the jury; the physician won his case.

> "If a physician or surgeon be sent for to attend a patient, the effect of his responding to the call, in the absence of a special agreement, will be an engagement to attend the case as long as it needs attention, unless he gives notice of his intention to discontinue his services, or if dismissed by the patient; and he is bound to exercise reasonable and ordinary care and skill in determining when he should discontinue his treatment and services. If you find from the evidence that the condition of the plaintiff's arm is due to his having been dismissed when he ought not to have been dismissed, the defendant would be liable, unless the evidence further satisfies you that the defendant, in dismissing him, if he did dismiss him, used ordinary and reasonable care and skill in determining when to dismiss him; and, if he dismissed him under a mistake of judgment, he would be liable, and you should hold him liable unless you find from the evidence that, in framing up his mind when to dismiss him he exercised reasonable and ordinary care and skill, and had regard for and took into account the well settled rules and principles of medical and surgical science."

TERMINATION OF SERVICES.

While it is undisputedly true that a physician is not required to nor can he be made to attend a sick or injured person, if he does undertake such services he, as we have shown, enters into an implied contract based on ordinary common sense and justice. He may terminate such a contract, or the patient may terminate it, but in certain recognized ways. In all such common, implied contracts, there are certain well recognized fundamental considerations, as for instance that either party thereto may terminate the arrangement at his pleasure, but that the party so doing must give the other party to the contract reasonable notice and reasonable time to make other arrangements. The patient has every right to dismiss his attendant physician and call another, or any number of others, if he desires so to do. This is a point frequently overlooked or not considered by many physicians who seem to look upon their patients as their own private property. Courts always construe these common undertakings in the light of the circumscribing facts. Just what would be considered reasonable notice of a physician to a patient that the physician's services were to be terminated, would depend upon the facts in the case. If a physician became annoyed at his patient and left him in a huff in a critical condition and without giving him time to secure the services of another physician, he would undoubtedly be held liable for damages. A celebrated case of that kind is the suit for damages against Dr. Flood of San Francisco, in which a judgment for $2,000 against Dr. Flood was sustained by the Supreme Court of California in 1901. Dr. Flood undertook to confine a woman and left at midnight, abruptly, because the woman would not keep still while he attempted to apply forceps. Dr. Flood was a very irascible, impatient man. The court, in its final decision, is very definite on this point of termination of services. It says:

> "It is undoubted law that a physician may elect whether or not he will give his services

to a case, but, having accepted his employment, and entered upon the discharge of his duties, he is bound to devote to the patient his best skill and attention, and to abandon the case only under one of two conditions: First, where the contract is terminated by the employer, which termination may be made immediate; second, where it is terminated by the physician, which can only be done after due notice, and an ample opportunity afforded to secure the presence of other medical attendance."

It must be remembered that there is no distinction between a patient who pays and a patient who is receiving gratuitously the services of a physician; the obligation assumed by the physician is the same in either case and his duties to his patient are no less and no more in the one than in the other circumstance.

APPLICANTS.

Several of the component county medical societies have adopted the plan of regularly sending in the names of applicants, to the office of the State Society, and awaiting a report from our office before considering any action upon such applications. It is a very wise thing to do, as the JOURNAL has remarked on more than one occasion, and the wisdom of this course was well shown last month when one county society was enabled to keep out a man who had been a notorious abortionist and grafter in another county. It is a very simple matter to send in such names and in many instances, as in the one just mentioned, it will save a good deal of trouble in the long run. We have found it unfailing, as the years go by and the records of physicians grow in the office of the Society, that when once a note of something unprofessional or crooked is made against a name, the list of such notations will grow longer and longer as the years pass. If we note that a physician has been mixed up in a coroner's case of abortion, even if there is not sufficient evidence to hold him on a criminal charge, soon or late another and similar incident will be recorded in his connection, and it sometimes happens that we find on such cards, eventually, "sentenced to San Quentin for — years." The unlicensed fakers and Chinese specialists are not the worst quacks by any manner of means; nor the most dangerous.

JUNE MEETINGS.

The occurrence of many medical and allied society meetings during the middle and latter part of June will be more extensively noted in the next issue; they came so late in the month that not much could be done in the way of preparing material relating to them without holding back the JOURNAL too long. We did hold it up long enough to get in some notes in regard to the American Medical Association elections and matters of business, but that was about the best that could be done.

PHYSICIANS OF SAN FRANCISCO, PLEASE REGISTER!

The following letter received from the Secretary of the Board of Medical Examiners is self-explanatory and the JOURNAL is only too glad to publish the notice again; we have repeatedly, in the past, urged the physicians of San Francisco to register their licenses with the county clerk, as required by law!

"We are informed by an individual who is checking up the physicians in this county that less than fifty per cent. of those registered with the County Clerk prior to the fire have re-registered in accordance with the Medical Practice Act.

"It occurs to me that it would be advisable to insert in the JOURNAL a notice calling the attention of the profession to this feature of the law.

"We are well aware that you have endeavored both through telephonic communication, personal correspondence and through the columns of the JOURNAL to impress upon the profession the necessity of registering in the county in which each individual may be practicing.

"Respectfully yours,

"C. B. PINKHAM, Secretary."

FEDERAL CONVICTIONS.

The sentences awarded those who have up to date been convicted in the federal court for misuse of the mail in quack medical work, are as follows: Homer C. Edwards, M.D., one year in Alameda county jail; G. M. Freeman, M.D., one year in Alameda county jail and $1,000 fine; C. M. Scott, M.D., $400; C. A. Baxter, $400; E. J. Rice, M.D., $750; J. T. Burns, $500; Donald Harris, $400; H. J. Pierce, six months in the Alameda county jail. These men were all connected with different advertising institutions. It must be said for the credit of the Board of Examiners that "Dr. Morel," the Jordan Museum, the Globe Medical Dispensary and the Raymond Remedy Co., were all closed up before the federal authorities arrested and indicted these men.

ILLEGAL PRACTITIONERS.

The Board of Medical Examiners is very desirous of discouraging the illegal practice of any form or method of the healing art, and to that end desires that our members individually or collectively as represented in the various county medical societies, will send in the names of any newcomers or of those concerning whom there is any doubt of being properly licensed. Communications on the subject may be sent to the Secretary of the State Society or to the Secretary of the Board of Examiners, Dr. C. B. Pinkham, Butler Building, San Francisco.

MAYO CLINIC AND THE UNIVERSITY OF MINNESOTA.

The Mayo brothers gave a million and a half dollars to the University of Minnesota to be known as the Mayo Foundation and the income to be used for postgraduate teaching, research and the like. Subsequently they, and the Trustees of the University, considered the proposition of forming the Mayo clinic into a sort of regularly recognized and attached postgraduate school of the University. Under the suggested terms of the agreement, which was to have been finally acted upon June 5th and which was probably accepted, though we have not been officially advised of that fact, the Mayo brothers undertake to act as trustees of the fund and to defray, in addition, all expenses of this postgraduate department for a period of six years after September 1915, thus allowing the income from the fund to accumulate and materially increase its size by the time they finish their generous support. We certainly congratulate the University of Minnesota; it will soon have one of the best postgraduate departments in existence.

A SPONGE IN THE BELLY.

Occasionally it happens that in the course of a serious operation upon the abdomen, a sponge or the like will be left inside when the abdomen is closed. These cases are astonishingly rare, but they do occur and they frequently get into print—or into court—and excite the ridicule and the mirth of the layman generally. It is astonishing that he cannot realize the gravity of the conditions surrounding such an operation and the fact that his point of view is radically wrong. It is not surprising that an occasional happening of this sort should occur; it is a matter of wonder that it does not happen more often, even with the best of modern precautions, forceps attached, pads counted, etc. The surgeon, with his two hands wandering around in the belly of his patient and the life and health of that patient resting entirely in those two hands and the activity of those ten fingers, with every atom of his brain and nerves at the highest tension, might well be pardoned for thinking less of a sponge than of an artery or a subsequent infection. But the layman is uncharitable. Why not try to educate him a bit on this matter of sponges?

DOCTORS' OFFICE ROBBER.

We are advised that there is a man who is making a specialty of robbing the offices of doctors and dentists in the office buildings of San Francisco, and as the manner of his performances is in every instance about the same, the detectives have come to the conclusion that the many petty larcenies are all done by one man. It is suggested that extra precautions be taken in the way of locking things up, not leaving anything very valuable lying around, etc. It is not at all improbable that this same active gentleman may find things getting uncomfortable for him in San Francisco and may move to some other place to continue his operations. We would suggest to the physicians of Oakland, Los Angeles and other larger places that they be on the watch for him.

EXAMINE THE PLACENTA.

In every case of confinement it will be well to examine the placenta very carefully in the presence of some other person and to have recorded in your notes of the case the fact that this was done and the name of the person who witnessed the examination. Damage suits for alleged malpractice based on alleged negligence in obstetrical cases, are increasing. Referring to this point one of our attorneys, Mr. Morrow, writes:

> "We have had from time to time the same point urged as a basis for suit, and while there is no doubt at all that every physician does make such examination thoroughly as a matter of course, nevertheless to have it appear clearly from the testimony of a nurse or some other person that such examination was made would perhaps keep patients from basing suits on such ground."

This is a very good place in which to remind you again about the importance of keeping sufficiently full records; and let the fact of the careful examination of the placenta, together with the name of the nurse or other person who was present and witnessed it, be a part of the record in every obstetrical case.

NOTICE.

Read through the advertising pages of the JOURNAL and place your order with the JOURNAL advertisers. Help those who help the JOURNAL.

ORIGINAL ARTICLES

TREATMENT OF INFECTION.*

By STERLING BUNNELL, M. D., San Francisco.

The treatment of infection is a very comprehensive subject and one about which we all know considerable, and all I'll try to do in this brief time is to systematize the main principles, arranging our armamentarium against the germs on a rational instead of empirical basis. Then the technic of the ways and means of carrying out these principles will depend on one's current ingenuity.

First, how do the germs affect the body?

1. They poison it by their toxins and by the products of their enzymes on our body proteids, namely, ptomains.

2. They liquefy by their enzymes our body proteids and fats.

3. They draw white blood corpuscles and round cells to the field and kill them.

4. They hemolise red cells, causing anemia.

Second, how does the body fight the germs?

1. Anti-toxins neutralize toxins.

2. Bacteriocydins and bacteriolysins through the connecting links of complement and amboceptors kill and dissolve the bacteria and liberate but do not destroy the endotoxin.

3. Opsonins prepare germs for phagocytes and the phagocytes then engulf and dissolve the germs and destroy the endotoxins.

There is no anti-toxin in the serum for the ptomains and probably none for the endotoxins.

Other anti-bodies in the blood are apparently not important against the germs, as precipitins, agglutinins, hemolysins, cytolysins, and anti-ferments.

Anti-bodies are proteids and are found in the blood, lymph, and some also in the exudates and transudates, tears, saliva, urine and milk, and vary directly with the amount of nitrogen or roughly with the specific gravity of these fluids. Those passively obtained last but a few weeks and those actively obtained last longer.

Germs act in different ways and should be attacked accordingly; thus: *Streptococcus* makes a soluble toxin and a hemolysin but is not leukotactic nor has it an endotoxin. It should be fought with polyvalent serum as this is bacteriocidal and contains opsonins for the help of the phagocytes, and with leukocytic extract. There is no anti-toxin or anti-hemolysin.

Staphylococcus makes a soluble toxin, staphylotoxin, which causes cloudy swelling, amyloid degeneration, etc. It is very chemiotactic, gathering much pus and has a leukocydin. Its endotoxin is not very poisonous and its hemolysin varies with its virulence. It is best fought by vaccines and leukocytic extracts. Serum is practically without value.

Pneumococcus makes an endotoxin and a feeble ectotoxin. It is fought by serum which is bacteriocidal and bacteriolytic. The immunity is short.

B. Coli injures with an endotoxin but not a soluble toxin, and is best combated by vaccines which make a bacteriolytic serum.

Tetanus and *diphtheria* injure by ectotoxins and are controlled by serums, while *typhoid* and *tubercular* germs injure by endotoxins and are fought by vaccines.

To sum up the resistance of the body we have:

1. The blood constituents. Hence in inflammation we have dilated vessels, quickened pulse, lymph edema, and the gathering of pus cells all in an effort to assemble the anti-bodies.

2. Pyogenic resistive zone.

3. Adhesions.

4. Reflex rest or immobility.

5. Elimination from the body of toxic products through the feces, urine and sweat.

6. The general vitality of the patient.

If the body cures itself there is a more lasting immunity, but Nature is too slow and leaves great scar contractures and impairment of health by long absorption.

We should terminate the infection as speedily as possible or else the germs will acquire a resistance or immunity against our agents of defense and an equilibrium will be established which will allow the infection to be chronic and relapses to occur.

If we get all our defensive agents working at once, it will be harder for the germs to acquire the many immunities at once, and easier for the antibodies to kill the already injured germs.

Our agents should get to the exact field of action. This is difficult in such cases as spirochete or sleeping sickness trypanosomes in the central nervous system, spirochete in the center of a gumma, or tubercle germs in a caseous mass, and especially if an obliterating endarteritis is present. The best serological results have been with general infections where the toxins and germs have been in the blood stream and were get-at-able. Flexner's anti-meningicoccus serum and the Swift-Ellis method are examples of direct application.

We should encourage the inflammatory process of the body and intensify Nature's own methods. But when we endeavor to remove the irritant, we should not forget to protect and nourish the already sick tissues.

The following ways and means are arranged in headings:

1. *Bring blood to the part.*

Bier bandage (2 hrs. on and 1 hr. off and on during sleep).

Bier cupping and suction chamber.

Hot water bag if dry, hot compress, or hot poultice to hold more heat.

Hot air baking, alternating heat and cold.

A good routine is a large hot boric compress changed two hourly for the first two days only. This may abort an infection.

A compress is an incubator, giving the germs the heat and moisture that they thrive in and

* Read before the San Francisco Polyclinic, January 21st, 1915.

therefore it should contain a mild antiseptic for the surface germs and be used with discretion.

2. *Improve the circulation.*

This is done by relieving the congestion. This lessens pain and exudation.

Elevation of limb.
No constriction or tension by dressings.
Dehydrate by glycerine or mag. sulph.
Multiple punctures and cupping.
Blood letting locally and generally.
Incision, especially if in dense tissue.

3. *Give the inflamed tissue rest.*

Bed.

Splints, including the joint above and the one below the infection.

No food if alimentary tract; strap if pleura.

4. *Remove the irritant.*

Wash the surface and often enough to keep it clean. Remove all necrotic tissue, crusts and other culture media. Irrigations and soakings in bath, dilute, wash off and destroy bacteria and their products. Sometimes an old sinus does better if the pus is left in in order to act as does a septic tank. *Disinfect* but do *not kill the tissues.* Wounds will not heal if alcohol, peroxide or other disinfectants are applied to them daily. Wound surfaces are covered with delicate embryonic cells sick from the poisons of the infection and we must rely on the growth of these cells in the healing of the wound. These cells should be nourished and not killed daily with antiseptics. Cauterization should be done only when it can be done completely. A strong antiseptic is well for a short time or a weak antiseptic for a long time, the latter mainly to inhibit germ growth. Germs are deep in the tissues and to reach them we must use a penetrating disinfectant. Seelig and Gould have shown that iodine, alcohol and carbolic penetrate the most and that iodine in alcohol is best of all, but this is too strong for a compress. Full strength alcohol is our best practical penetrating disinfectant. It should be used for not over two or three days and in an open compress that is not covered with a protective or else the skin will be blistered. It often aborts a deep infection; 10% inhibits, 30% will not kill all germs in 20 hours, 50% and over kills pus germs in one minute. Camphor-phenol is probably the next best for the first compress.

Some practical disinfecting values are the following:

Iodine as low as ¼% in KI sol. kills pus germs in one minute.

Bi-chloride acts slowly but in high dilutions: 1-500 takes 30 minutes.

Peroxide of hydrogen kills staphylococci in 5 minutes.

Permanganate of potash at 1-10,000 kills streptococci in 10 minutes and gonococci in 30 minutes.

Argyrol at 50% does not kill gonococci in 30 minutes.

Silver nitrate at 1-5,000 kills gonococci in 1 minute; 1% kills staphylococci in 1 minute and 1-1,000 in 5 minutes.

One per cent. basic fuchsin is said to have great disinfecting power.

Serum applied locally may help.

Drainage removes the irritant. Rubber bands are handy drains. Iodoform gauze is preferable to plain gauze as it remains sweet. If the two angles of an incision are packed the exudate will drain. Gravity should determine the place of the drainage hole. The best solution by far to promote drainage is *Wright's solution.* The 4% sodium chloride inhibits germ growth and the 1% sodium citrate prevents fibrin formation and hence all crusts, plugs, etc., will be avoided and even a puncture wound will drain freely as long as the dressings are saturated with this solution. It should be poured on three-hourly and used in open compress and even then will blister after three or four days.

5. *Don't spread infection.*

A hypodermic needle should never be used in or near infected tissue as it often starts a cellulitis.

Breaking through the pyogenic resistance zone or cutting through good tissue opens new infection and absorption areas. If, however, open drainage is established it sometimes greatly helps to do so. A carbuncle is greatly improved by cutting well out into the good tissue. It forestalls infection. If, however, a tissue with lymphangitis is incised it becomes almost invariably worse. Breaking protective adhesions or squeezing infected tissue as in the rough handling of an infected appendix spreads infection.

6. *Lay tissues as widely open as practical.*

In a campfire only that part of a log burns which is in the proximity of another log so the two surfaces can reflect the heat against each other and so intensify the conflagration. The same is true with opposing infected surfaces, so make an adequate incision and make the wound funnel-shaped, avoiding sharp concavities.

7. *Relieve tension.*

Early incision before the damage is done but not in case of lymphadenitis or diffuse cellulitis in loose tissue.

8. *Serum therapy.*

Serums for passive immunity, vaccines stock and autogeneous, leukocytic extract, transfusion, serums locally, bring blood to part and improve the circulation.

9. *Preserve vitality of tissues.*

That is guard against excess of heat, cold, trauma, chemical disinfectants, long contact with pus, tension of sutures, pressure of dressings. Excessive congestion or lymph-edema should be relieved by elevation, puncture or cold, especially where the tissues are dense, to guard against necrosis or in case of bone, sequestrum formation.

A dressing that nourishes the tissues like the serums or Lock's solution, as used in growing tissues outside of the body, is the ideal dressing provided the germs can be kept down.

10. *Counter-irritants* are impractical.

11. *Remove foreign body* sequestrum, dead tissue buried silk, etc.

12. *Remove primary focus* as center of carbuncle, tubes in tubercular peritonitis, pustle in anthrax.

13. *Close cavities.*

Collapse pleural cavities, press together the walls of abdominal sinuses, or any granulating cavity. Bone cavities are hard to heal, as the ebonized shell of bone lining them is an effectual barrier to new growth.

14. *If gangrene, keep it dry*, as wet travels rapidly. Infected sloughs are best treated with strong carbolic acid or digested away with artificial gastric juice.

15. *Eliminate* by hydragogues, hot baths and plenty of water to drink.

15. *Build up vitality in general,* food, rest, baths, stimulants.

In the healing of wounds, the granulation tissue is not encouraged as well with straight balsam of Peru as with the balsam diluted with six parts of castor oil as it is far too strong, injures the tissue and increases discharge. The same applies to camphor-phenol and it gives much better results and allows better healing if diluted with five parts alboline. When granulations are hard and sluggish quick healing may be obtained by shaving off an eighth of an inch with a knife instead of using zinc chloride or silver nitrate. Strapping granulations will shape them, keep them down and stop discharge just as a plugging of bismuth paste stops discharge by its obliteration of all free surfaces. If walls of a granulating cavity are pressed together by deep sutures they usually unite.

To fill a granulating cavity, cut a piece off the wall so the cavity fills up full of blood and let this clot. Leave it so and each day or so let more blood flow into it so the cavity remains full. The blood nourishes the surface granulations, is antiseptic, does away with discharge by doing away with all free surfaces and acts as a framework into which the vessel loops and cell tendrils can extend and grow. A granulating surface is comparable to the under surface of a jellyfish: it is flat when out of water as its tentacles are directed along the surface, but when floating in water the jellyfish's tentacles extend out into the water freely and far-reaching. This is the way granulation tissue acts under a blood clot.

Skin edges will grow rapidly if directed across a denuded area by adhesive strapping or a crust. If 8% scarlet red be painted on them and an open compress of Lock's solution be applied new life will come into them. Approximating edges by adhesive or rubber-band traction saves time.

In case of *chronic infections* remove the barrier base. Use vitalizes a part. If infections are acute, use wet dressings, if a wound is no more infected it often heals more quickly and remains less infected if allowed to dry and heal under a crust.

Most acute infections and chronic ones are accompanied by inadequate inflammation and we should stir up more inflammation artificially. In the healing of most operative wounds there is adequate inflammation. Cases of excessive inflammation should have the excess of congestion relieved (by puncturing, elevating, dehydrating and applying cold).

When should we use cold and when heat?

If a rabbit's ear be injected with pus germs, inflammation will result and eventual healing, but if the ear be first chilled by ice, there will be no inflammation but just necrosis as the tissue has been too de-vitalized by the cold to react.

By applying heat to inflamed tissue we provide a temperature as many degrees above the optimum temperature for germ growth as cold is below and we decrease the resistance of the tissues far less.

Cold decreases swelling better than does heat as it causes at first at least contraction of vessels and dispels venous stasis.

Cold is best used to dispel swelling in non-septic inflammation such as sprains or bruises and also the very painful swelling of encapsulated organs such as the teste. Used early in sprains it prevents joint effusion. It may be used to dispel the intense congestion of excessive inflammation to save the tissue from necrosis. Clinically, cold over an appendix has helped. This has been explained by there being a reflex dilatation of the deep vessels as the result of the contraction of the surface vessels. Except for these exceptions heat seems preferable to cold in infections.

THE USE OF THE LANE PLATES IN FRACTURES: REPORT OF FORTY-EIGHT OPERATIONS.*

By FRED R. FAIRCHILD, M. D., Woodland.

Since the meeting of the Northern District Medical Society in Woodland one year ago, several of the members have done me the honor to suggest that they would like to hear further consideration of the paper, that I at that time read, on "The Open Treatment of Fractures, With Special Reference to the Use of the Lane Plates." I am the more ready to take the subject up again, since time prevented any discussion by the fellows present. Then I am glad of an opportunity to defend a method the results of which make me increasingly enthusiastic, while, at the same time I am aware that with many others, it is falling into disrepute.

In rereading my last year's paper I find it to be about as complete a statement of my present convictions as I am able to make. I can do no better than to give a résumé of that paper, with such additions as may be necessary to bring it up-to-date. Among these additions will be a brief classification of the forty-eight cases in which the method of Mr. Lane has been employed.

Appreciating the strides made in surgery since the beginning of anti- and aseptic technic, we should be ready to accept almost any additional possibility. But the compound fracture since the dawn of the healing art has commanded a respect born of fear and, even to-day, the attitude of the laity generally, and the profession largely, makes us slow in converting a simple into a compound

*Read before the Northern District Medical Society, 1914.

fracture. This attitude is often responsible for imperfect results. We are demanding more of ourselves each year and effort that we counted good but yesterday we know to be bad to-day. Certainly we must accept this as true in regard to fractures. The X-ray has given us eyes to see, modern surgery has given us means to mend, and our own earnestness of endeavor should bring to us the skill to apply this new found knowledge to the perfect restoration of the majority of fractures.

It would be profitable to consider the various forms of direct mechanical support that may be applied to fractures. Time does not permit of this and, since I shall confine myself to discussing the use of the Lane plates, I would avoid being misunderstood by stating that I do not consider plating as superior always to other means of support. I do believe that both theoretically and practically, the majority of cases treated by the open method, will be best served by the use of the metal plates. Further I do not believe that any open operation should be done until honest and intelligent effort has been made to secure satisfactory reposition by the more conservative practice. If, after such endeavor, we are convinced that the result will be functionally imperfection or obvious deformity, duty to our patient and to ourselves should impel us to adopt other means that he may not go through life with a needless handicap.

You will accept the statement that, except for the fear of infection, we would cut down upon the majority of complete fractures. This would insure perfect reposition and anatomically and functionally the most nearly perfect results. It would guarantee, in very large measure, against nonunion which is often the result of the interposition of soft tissue between the opposing fragments, preventing the meeting of the osteoblasts.

If it be true, then, that the open method has so much to recommend it, it behooves us to consider very carefully the objections. We may conveniently classify them under the following heads:

The objections:

a. Danger of infection.
b. Possibility of irritation by the plate.
c. Necessity for hospital treatment.

Our experience has been such as to make us feel practically the same security in bone as in abdominal work. Perfection in aseptic technic is a possibility. The more nearly we attain to it the further may we go in bone surgery. In this matter the personal equation enters. If we are finding pus in the trail of primarily clean work, something is wrong, and bone plating had best be left to some other fellow until you are sure you have found and corrected the error; otherwise grief will follow.

In our series of 48 cases we have had infection but once and, under the circumstances attending, I am sure you will not blame the method and I hope not the operator. In an automobile accident the patient sustained a fractured skull and a double fracture of the femur. He was rendered unconscious and never regained consciousness. A decompression operation was at once done. Six days later the thigh had become immensely swollen from constantly accumulating blood. In his delirious condition he could not be kept at rest. The result was gouging of the soft tissues by broken bones and continued oozing. Not knowing how else to stop this source of hemorrhage, we, under these most unfavorable circumstances, plated the femur in two places. Infection followed. What the result would have been I do not know since the patient died three days later from the head injury. I am not willing to accept this case as a count against bone plating for no one entirely sane would, from choice, use the open method under such circumstances.

The second objection is that the plates may irritate and have to be removed. Our records show that, except where we have used this method in some stage of a compound fracture (4 cases), we have removed but three plates in 48 operations. Two of these were applied immediately under the skin, over the prominence of the internal condyle of the humerus in patients who were very thin. The expressed preoperative intent was to remove these plates as soon as they had performed their function. The third case was one in which we had not anticipated the necessity of removal. The patient was 54 years old; a confirmed alcoholic and debilitated subject. The fracture was a spiral of the tibia with much comminution. Two plates were applied. Good union resulted with no shortening. After four months some irritation necessitated the removal of the plates under local anesthesia. Several subsequent dressings were required. This case caused us more annoyance than any other we have had but the ultimate results were all that we could have desired.

We have used plates in three cases of compound tibial fracture. They were applied in the most accessible places. The wounds were left open, the intent being to hold the fragments in proper position until sufficient callus had formed to enable us, with the aid of external splints, to retain a correct position until complete ossification. In each of these cases we succeeded in giving the patient a perfect functional result with *no* shortening. Our experience compels us to insist that the objection of "subsequent irritation" is not a valid one and further to maintain that, if the application of a plate will give functionally or cosmetically a better result, the inconvenience and discomfort of its removal should be cheerfully accepted.

The last objection is that the work must be done in a hospital. This may work a temporary embarrassment, but, if it prevents a permanent disablement, that can not be taken into consideration. The objection is rarely insurmountable but, if it is so, the conservative plan had best be followed, no matter what the indications. It is a very bold or very foolish surgeon who opens up a fracture except under conditions of his own choosing.

So much for the objections to the use of the Lane plates. Let us consider the advantages.

a. It is possible to secure and retain perfect apposition.

b. The patient need be confined to bed but a few days.

c. By this method there is the minimum of suffering.

We need spend but little time on the first of the advantages mentioned. It is possible with greater or less ease, depending on the skill of the operator, to replace the fragments in exact position and to hold them there. This means the minimum of callus, a factor of vital importance if the fracture involve a joint. Why are so many patients who have sustained a Potts fracture sufferers afterward? Not because, as they are so frequently told, there are adhesions in the joint, but because the fragments were not perfectly replaced, or, if so replaced, were not held absolutely immobile and as a result not adhesions but callus is in the joint. I know of no mechanical means that gives the absolute fixation of a plate with two or more screws at each end. Near a joint it may not be possible to have more than one screw on the end of the short fragment but, fortunately, in this position but one screw is needed, since the motion of the joint relieves the fracture of the strain to which it would be subjected were it farther away.

Perfect reposition of the fragments is the best guaranty against nonunion. Soft tissue intervening, particularly periosteum, may cause a fracture apparently well set to remain movable. This may happen only occasionally, but when it does occur it is an annoying complication and one that may lead to a great deal of embarrassment.

We suggest as a second advantage that the patient can be about in two or three days, and this is a factor the importance of which is commonly overlooked. Fractures occur most frequently in those of an active habit. The tibial fracture is common to the laboring man, and it is the one we most dread by reason of its disinclination at times to unite. The reasons for trouble with this bone are several. By the usual method of treatment it means weeks in bed for a man habitually active. And this is not all; it means the discomfort of a heavy extension weight; the pain of slipping fragments, all of which, combined, depress the patient to the point where his vitality is not sufficient to enable him to supply the material necessary to repair. The not infrequent result is non-union. Contrast this history with that of the patient who has had the fracture plated. The position is correct. The fragments can not slip and there is no pain. He is about on crutches; out in the fresh air gaining the encouragement and vitality which come with freedom and exercise. Under such circumstances we may expect union where otherwise we might fail.

We suggested that, in the third place, by repair of a fracture with the plate there would be the minimum of pain. Above we mentioned the element of suffering as a deterrent factor in union. At best, a broken bone is a painful proposition and usually the pain does not cease with the operation of setting the bone. Every voluntary motion or involuntary muscular spasm causes slipping of the fragments and consequent agony. This plus the misery attendant on extension and confinement makes the condition well nigh unbearable. I think if patients knew that this is largely unnecessary we would be compelled to use Mr. Lane's plates more frequently than we are now doing.

Finally a few words in relation to technic may be in order. It probably does not differ materially from the methods employed by others of you, but the experience of each is valuable to the others, and I hope that I may in turn get many points from the discussion that I trust will follow.

The incision should be generous. With a wide field the manipulation becomes easy and the sum total traumatism is greatly reduced.

The knife used to make the skin incision should be laid aside and not subsequently used. We have no guaranty that in one of the deep skin glands a colony of pyogenic bacteria may not have been encountered. It is needless to risk spreading them.

When the incision reaches the deep fascia, towels should be stitched to it so that the skin will not again be seen until time to close the skin wound.

All manipulations should be made with instruments, if one would follow the tenets of Mr. Lane. I am free to confess that, until quite recently, I have been unable to do the work in this way. Gloves may be as thoroughly sterilized as instruments, but gloves may be torn on the sharp fragments. To avoid this danger I have been accustomed to using, for this work, heavy household gloves. The reason for my former inability to use instruments alone, I have determined to have been too small an incision.

Plates selected from the stock set are often needlessly heavy. Use as light a plate as is consistent with safety. We have had many plates made from heavy clock spring. They were exactly the size and shape desired, having been fashioned after a paper pattern previously fitted to the corresponding part on a skeleton, after the X-Ray had shown us exactly what character of support would be desired.

The screws should be very slightly larger than the point of the drill and the same taper. A screw a fraction too large will split the bone. This is a disaster. A screw a trifle too small will not be firm and either displacement or over production of callus will be the result.

Generally speaking the plate should be placed as deeply under a cushion of soft tissue as possible. This is the best safeguard against irritation. However, we do not hesitate to apply the plate immediately under the skin if by so doing we get better apposition or materially reduce the operative traumatism. The splint so placed will almost surely have to be removed. But the objection to removal is infinitely less than the objection to unnecessary violence to the soft tissues or to poor apposition.

Control all bleeding points without ligation if possible.

Drain away the oozing that may occur for 24 hours with a few strands of silkworm gut.

Close the skin with clips. I believe that a needle carried through the skin to the fat, which is at best poorly supplied with blood, or to a small hematoma that may have collected, invites infection and in bone work certainly is bad surgery.

For external dressing we use felt. It is light; easily removed for dressing or examination and answers every requirement.

Get the patient up as soon as possible.

At the present time we are hearing much of the bone graft and its use as a splint in the repair of fractures. Is it going to prove a more reliable procedure than plating? I think not and the belief is based on the following reasons:

1st. Its application is more limited.

If a fracture is near a joint it is essential that the fragments be placed in exact position and held firmly in place. If there is not exact reposition or if the fragments move even slightly during the process of repair there will be excessive callus and an impaired joint. I do not believe that any bone splint will accomplish these two necessary conditions as will the Lane plate.

The bone splint is necessarily more or less frail. It could not be relied on to retain position under stress. If the fracture, for example, were high in the shaft of the femur the danger of failure by the splint breaking would be considerable, for in this position the support by the external splints is unreliable. The Lane plates on the other hand will sustain a remarkable amount of violence without failing.

2nd. The danger of infection is not less.

Bone splinting is a procedure accompanied by more traumatism than plating. In some cases two incisions are necessary. The danger of infection is not decreased, for your graft is no more certainly sterile than is your plate.

In selected cases, as in un-united fractures, the repair of small bones, or the repair of large bones where it is possible by external splints, be sure of retaining position of fragments, bone splinting will become popular, but I believe that the pendulum will again swing, making the method of Lane the operation of choice in the great majority of cases.

There have been eight fractures of the shaft of the femur plated. There have been seven perfect results. The eighth died on the 3rd day from the effect of the fractured skull.

There have been eight cases of fracture of the lower end of the humerus involving the articular surface of the elbow joint. Two of these were old fractures with union in malposition. Of these one has an anatomical and functional perfect result; the other has very slight limitation of flexion. The other six are practically perfect.

Two cases of fracture of the lower jaw at the angle were plated. These patients had, following the operation, no other support to the fracture than that given by the Lane plate. They were at once allowed to masticate soft food. They had no subsequent pain. In one the result was perfect. In the other I was guilty of overlooking a longitudinal fracture of the alveolus that subsequently made me some trouble, but the result to the fracture plated was perfect.

Three cases of non-union have been plated with union in each case.

Three compound fractures have been plated, the plates being subsequently removed. The result in each case has been perfect.

Total number of fractures during interval from which these cases have been drawn, 205.

Summary.

		1910.
Fractures plated:		
Compound	1	Of the two simple fractures
Simple	2	neither case has made complaint.
	—	The plates have never been re-
Total	3	moved.
		1911.
Compound	1	Of the simple fractures six are
Simple	7	still in place and have given no
	—	trouble. The seventh was a
Total	8	Potts, in a man with bad varicose veins. Removed plate after expressed preoperative intent.
		1912.
Compound	0	No plate has been removed or
Simple	17	caused subsequent trouble. One
	—	patient, aged 63, after two
Total	17	months (fractured femur) with apparently perfect result died of abscess of the lung. Another had leg subsequently amputated for preexisting bone disease. At time op. was told amp. would surely be necessary.
		1913.
Compound	1	Of these two were removed
Simple	10	after expressed preoperative in-
	—	tent and one where removal
Total	11	had not been anticipated.
		1914.
Compound	0	All in good condition, but too
Simple	9	soon to draw conclusions. No
	—	plates removed. No irritation
Total	9	from any plate.
	—	
Grand total	48	

GAS BACILLUS INFECTION.*

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If one presents something before this learned body which boasts absolute novelty it may enjoy a hearing justified by its newness; if it is something old, trite and not in a new dress it has the advantage of old friendship; if it lies between these, being neither so rare that it is not met with, nor yet so common as to be threadbare, it merits at least the consideration accorded acquaintanceship if not friendship.

In bringing to your notice this subject of gas bacillus infection I have gone over the material previously reported in the literature, so far as possible.

No fewer than eleven appellations have been employed for this gas bacillus infection and the organism causing it. Since 1892 when Welch identified and described it, the bacillus now known as the B. A. C. has been accepted, in America at least, as the organism principally concerned in the production of gas in human tissues, living or dead. In this article we are referring to the B. Welchii only, and not to any other anerobe of this group.

We are not trying to differentiate between this organism and others of the same group, known by other names in other countries, nor are we

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interested in other names as B. perfringens of Veillon and Zubel, vibrion septique, etc.

"The processes which bodies undergo in being split up by bacteria depend, first, on the chemical nature of the bodies involved, and, secondly, on the varieties of the bacteria which are acting. The destruction of albuminous bodies which is mostly involved in the wide and varied process of putrefaction can be undertaken by whole groups of different varieties of bacteria.

"The process is an exceedingly complicated one when it takes place in nature and different bacteria are probably concerned in the different stages. When carbohydrates are being split up, then various alcohols, ethers, and acids (e. g., lactic acid) are produced. During bacterial growth there is not infrequently the abundant production of such gases as sulphuretted hydrogen, carbon dioxide, methane, etc. The precise substances any particular bacterium is capable of forming can be found out by test-tube and cultural experiments. But many substances are produced by bacteria, of the exact nature of which we are ignorant; for example, the toxic bodies which play such an important part in the action of many pathogenic species."

In discussing this subject we shall confine our report to two cases of gas production in the tissues by the B. Welchii with recovery of the bacillus culturally, and the recovery of the patients clinically.

Case 1. B. S. Twenty years old. Family history negative. Never sick in life. Neisser three or four times. No lues to his knowledge. Drinks whisky and beer freely and smokes. Dec. 4, 1912, received a bullet wound in right thigh while attempting to hold up a man. The bullet was removed and the wound healed in about two weeks and patient felt all right except for some stiffness of the knee. On Feb. 1, 1913, noticed a swelling over the point of entrance of the bullet. Within ten days this swelling disappeared—or nearly so—but almost immediately began again to increase in size, becoming larger and associated with pain in his right knee.

On Feb. 25 entered hospital complaining of the swelling in his right groin and pain in his right knee. On examination pulsation was noticed in the swelling which was directly over the usual site of the femoral vessels and he was operated for a traumatic aneurism of the femoral artery, with ligation of that vessel. Gangrene of the right foot followed; and amputation in the upper third of the leg was done on the 16th of March, 1913, but the flaps were too poorly nourished and did not heal. Consequently on April 8, 1913, a Gritti-Stokes amputation was done under spinal anesthesia with excellent results.

After the operation for the aneurism the patient developed an infection throughout the extent of the wound, which had been sutured, which infection had associated a gas bacillus infection with gas and crepitation, the organisms being recovered by culture by Dr. Victors. The sutures were removed, peroxide compresses were applied and the gas bacillus infection was overcome in two or three days and the wound was allowed to heal by granulation. The patient felt rather ill, but ran the usual course of any mixed wound infection.

Case 2. G. B. Carpenter, born in Pennsylvania. On June 29, 1913, fell 14 feet from a scaffold striking with the outer side of his thigh about the middle on a 6x6 timber which was lying on the ground. The femur was fractured and splintered; soft tissues pulpified; and an irregular wound of skin and muscle tissue, with exposure of bone was noted. On the next day the characteristic discharge of gas bacillus infection was remarked and smear and cultures were taken and examined by Dr. Victors, who reported the presence of gas bacillus and of staphylococcus. The external wound was enlarged both upward and downward (not more than two or three inches) and dressings of peroxide were applied. Recovered in two or three days of the gas bacillus infection only to suffer an osteo-myelitis of the femur, necessitating resection of the shaft and later, in Nov., 1913, a hip joint amputation. The patient recovered.

The seriousness of this type of infection has been variously estimated, but of late, i. e., within the last four or five years, it has been reported as between 30% and 60%. It seems to the writer that there is some ground for incredulity as to the validity of these statistics, in the sense that the gas bacillus was the only infecting organism, or indeed the one chiefly responsible for a fatal termination. McFarland in the seventh edition of his work, says: "In the internal organs the bacillus is usually found in pure culture, but in the wound it is usually mixed with other bacteria. On this account it is difficult to estimate just how much of the damage before death depends upon the activity of the gas bacillus." The writer believes that an infection with the gas bacillus alone is a very rare condition, possibly occurring as a terminal infection, or, possibly, in some of the puerperal infections noted; but even here open to question (as in case two) by Young and Rhea where the emphysema was extreme during life and the leukocyte count reached 126,400. This was an abortion case, but the patient maintained till death that she had not even been examined and positively had not been tampered with instrumentally. Credence can not be placed in such declarations at such times. The gas bacillus was not recovered but the bacillus coli was recovered from the liver. The reason given for failing to find the former was that the body had been kept at 32 degrees for 24 hours. I consider this case doubtful as to the g. b. being the cause of death. The colon bacillus was enough and besides, the colon, pneumococci, and streptococci give these high counts. The highest polymorphonuclear leukocyte count Murphy of Chicago ever saw was 80,000 in a streptococcus peritonitis metastatic from an infected finger. In their Case 1, the bacillus was obtained in the blood, but from the swab from the uterine cavity two distinctly pathogenic organisms were recovered. The gas bacillus need not be called in to cause the demise of a pregnant woman when she has a traumatic perforation of the uterus infected with coli, and staphylococci.

Graham, Stewart and Baldwin's case was said to be "emphysematous from the top of her head to the soles of her feet" several hours before death. Even though the B. Welchii was recovered in pure culture, it was practically a terminal infection and this case too is open to doubt as to the varieties of bacteria involved as are all those of abortion.

The organism described by Welch and Nuttall is a small, non-motile, butyric-acid-forming, ane-

robic, spore-bearing, short, thick, bacillus, having a capsule, as its name suggests. It resists the decolorization of the iodin in Gram's stain, and grows on nearly all media, in the absence of oxygen. The gas formed in its growth is said to be of the following composition: H. 64. 3; CO_2 27. 6; N. 8. 1 parts; it burns with a pale blue flame.

Incidence: This organism normally constantly inhabits the intestinal tract probably from the 4th to the 20th day after birth; it has been found in soil, even frozen ground, dust of the street and floor, in cesspools, and has been recovered by Hirschberg from the intestinal tract of rabbits, dogs and swine.

This bacillus is one of the commonest forms of the anerobic putrefactive group of bacteria, causing active decomposition of proteins in the absence of oxygen. I believe this organism is not an infectant per se, but that it may find favorable environment for growth and development under certain conditions. These would be tissue de-oxygenation, either locally or systemically. Under these circumstances is explained its presence in local necrosis, as terminal infection and cadaveric invasion. Tissue devitalization, destruction and death, especially following gunshot wounds, compound fractures, and ill-nourished amputation flaps, offer favorable opportunity for invasion. It is reasonable to suppose that if anerobic cultures were routinely made this organism would be reported considerably oftener than it is. The point noted before, viz., the presence of other bacteria in practically all the gas bacillus infections, has some significance when we learn that most of them are aerobic in type, and, since they utilize the oxygen in the tissues, it lessens the available amount,—already lowered by disturbance of the blood supply and the necrosis of tissue,—and so enhances the development of the B. A. C. by symbiosis.

And while this organism is normally anerobic, it is not only possible but probable that under the influence of rapidly changing environment it facultates to aerobic conditions. Lahey was able to grow it on culture media for 24 hours in the presence of oxygen. And it has been repeatedly found in amputation stumps and wound discharges as late as the 11th and 25th days respectively and the stumps all the time irrigated with peroxide of hydrogen or other oxygenating agent. It would seem tenable to think that if its anerobic characteristics were retained such agents would cause its destruction. Signs and symptoms: My view, after reviewing the various articles on this subject, is that there are two symptoms associated with this infection every time, and two others that are found when the state of the wound admits of strict anerobic conditions. The two first mentioned are odor, sweetish and sickening, and the watery, blood-stained fluid; the others are gas bubbles from the wound and crepitation about it and in the tissues.

For, since the infection is always, or nearly always, a mixed infection, temperature elevation early or late can not be attributed to the gas bacillus alone. Who does not know of some operation with a most virulent infection arising from the staphylococcus albus or aureus or both these organisms in a destructive partnership? Who has not noted a marked variability in the usual temperature subsequent to, and dependent on trauma, the amount of necrosis and infection from the ordinary organisms introduced by the traumatizing agent, or by the dirt or shreds of clothing, etc.? The same thing applies to the pulse. As to the watery, blood-tinged discharge, a slightly stained watery fluid, or a serosanguinolent fluid is frequently seen, the former in staphylococcus albus and the latter in streptococcus infection.

Gas is rarely seen except in the presence of the B. A. C.

Blake and Lahey say: "Pain in nearly all of the cases has been almost entirely absent." Contrary to this is the statement by Cramp in his conclusions, for he says: "The extreme pain coming on during the first 24 hours following a severe injury, and this accompanied by a sudden rise in temperature, may be the first symptom of gas bacillus infection." Pain is noted in any swollen tissues with pus confined in a closed space or between planes of muscle or fascia and it comes on, depending on the virulence of the infecting organisms and the rapidity of their growth, whether the gas bacillus is present or not. Now in all these cases reported if the B. A. C. was sought and the cultures were made anerobically to prove its presence, but at the same time aerobic cultures were not made, it is not possible to state that other organisms were not present.

In the series of cases reported by Blake and Lahey ten were given in some detail. Of these ten, four were treated by amputation, two recovering and two dying. In two cases treated by multiple incisions, there was one death and one recovery. They say: "In most cases, it is safe to say that multiple incisions should be used only in the very early cases, and always with amputation in reserve if the former operation does not check the process. Amputation is practically always to be selected for the acute, rapidly extending process."

In comparison with these statements, Cramp says, in speaking of his 25 case-reports from the Bellevue service from 1904 to 1912: "Ten were compound fractures, ten were extensive lacerated wounds or crushes, two were due to gunshot wounds, two were post-operative, and one followed a burn of the lower leg. There were nine amputations in this group with six recoveries or 66 2/3%. Eight of the 25 cases, of which five were of a very pronounced type, were treated by incisions and either a continuous irrigation or bath, with no deaths." Indeed, three of these cases would ordinarily be classed as hopeless without amputation, and, showing a fatality following such procedure, would undoubtedly be considered proof of the virulence of the infecting organism.

In the total of 187 cases reviewed in Cramp's exhaustive search there was a mortality of 36% in 50 amputations. He says: "In contrast to this mortality of 36% for amputation there were 30 cases involving the extremities treated conservatively by incisions followed by continuous or fre-

quent irrigations or baths, with three deaths, and all three due to complications; one from tetanus, one from secondary hemorrhage, and one of Bloodgood's from a mixed infection 25 days after injury. In each case the gas infection was fully under control some days before death occurred."

"Nor can I find a single instance where generous incisions were made at the outset and the wound continuously irrigated or placed in a bath, that death has taken place." "There were nine other cases, also treated in this conservative manner, where the infection was located upon the trunk; all but one were superficial and all but this one which was a deep infection in the gluteal region, recovered." "Nor am I able to find here a single instance of death where the infection has been limited to the tissues external to the deep fascia, which seems extremely resistant, no matter what form of treatment was employed."

The position that the gas bacillus was the only infecting organism in the majority of the cases reported seems untenable; amputation was not proven a better form of treatment than free deep incisions.

Victors has seen the spontaneous disappearance of the organism from a resected joint in 24 hours without any radical intervention. The infection was a mixed one and a vaccine cleared up the other infection, but the gas bacillus disappeared without any direct intervention. It will be noted that practically all the cases reported in the literature followed trauma where the wound or wounds were exposed to dust, grease, dirt, or urinary or fecal contaminations, or were punctured wounds as gorings, dog or snake bite, and in nearly all the blood supply was disturbed. In some the wounds were directly soiled by intestinal contents, as in a ruptured appendix in Herring and Reuhling's case; or an ischio-rectal abscess communicating with the rectum reported by Dunham. In the three fatal cases of seven or more seen by Rixford the infection probably came from the patient's rectum, and there were present a great variety of bacteria. In Bloodgood's case reported in Progressive Medicine there were found two perforations in the rectum, which of itself, should and did mean a mixed infection. The idea that Cone's case *died* of a gas bacillus infection, particularly since the post-mortem was held 18 hours after death, in Baltimore in June, even though the body was kept on ice, I think, is not to be considered at all.

To be sure, the B. A. C. has some pathogenicity when all the elements of the case and the condition of the wound favor its rapid multiplication and the increase in its virulence. It has been proved by Brown of Boston that "When the gas bacillus is grown in ordinary broth plus tissue, and inoculated into guinea-pigs, this anerobe produced no lesion beyond a small subcutaneous nodule that was transitory, but if grown in bouillon plus tissue that had been rendered sugar-free by fermentation with B. coli, it was pathogenic for guinea-pigs, producing the characteristic lesions of B. aerogenes infection. Now, is it not possible that these cases which report an extreme virulence of the infection, and especially as most of them were mixed infections, and more especially as Billings says: "Colon mixed infection may occur anywhere," and a considerable number were directly infected with the B. coli, is it not possible, I say, that this same condition, viz., the removal of the sugar from the tissues by the B. coli, augments very materially the virulence of the B. A. C. and allows a more rapid and complete destruction of the protein, with the elaboration of products inimical, if not toxic to the host?

If this bacillus *is pathogenic,* it made a remarkable showing in a case reported by Robertson, for though the patient had what would appear to have been a serious infection with the gas bacillus for which amputation of the arm was done, with crepitus extending across his chest from axilla to axilla and from the thyroid cartilage to the 5th interspace, and in addition an isolated patch high up between the scapulae about three inches across, he recovered and the isolated patch, though untreated, disappeared spontaneously. Robertson reported six cases with two deaths; one a deep infection of the thigh muscles complicated by a severe hemorrhage, and the other died of a pulmonary edema with which he entered the hospital, and the gas bacillus infection was completely controlled before the pulmonary edema carried him off.

Baugher reported four cases with recovery of the organism in blood cultures. All were desperately ill but the illness did not seem to be enhanced by this organism. Nos. 1 and 2 were gallbladder cases with ruptured gallbladder in one with abscess under the liver, the other an acute cholecystitis, operated; and the gas bacillus persisted in the discharge from the wound for 25 days. Both recovered. The third case was also a gallbladder case *with fluid in his chest* to within one and one-half inches of the apex. Only one drop of bloody pus on aspiration, which showed a small Gram-negative, a fusiform bacillus, and the B. A. C. With resection of a rib patient recovered. Not much opportunity to oxygenate the pleural cavity so as to render it uninhabitable for an anerobe.

Case 4 was a gunshot wound of the lower third of the thigh, causing a fracture of the femur. A physician had thoughtfully passed a drainage tube through the channel made by the bullet. Patient came in 48 hours later; sepsis severe; dressings had not been changed since first application; patient dirty, unkempt, dressings soiled with fecal matter. Amputation suggested but not accepted; death three and one-half days later. No mention is made of free incisions, peroxide or permanganate or any other agent. Though the B. A. C. was recovered from his blood culture, his death was plainly due to sepsis. Baugher says: "So far as I have been able to find there has been no recovery reported when a positive culture was obtained."

This must be because anerobic cultures are not routinely made of the blood of all patients coming under our care suffering from an infection. Gwyn recovered repeatedly the B. A. C. from a patient during a space of 13 days before death. It is only fair to state that the streptococcus was found

in the third culture, and this organism is probably responsible for the endocarditis, to which, and not to the gas bacillus, the patient succumbed.

In an article by Billings who, with Rosenow, has been doing some remarkable work on the bacterial origin of many chronic diseases, it is stated, after speaking of the forms of infection, the usual sites, calling attention to the secondary foci, etc.: "A study of tissues and exudates of the focus usually yield various bacteria. Of the pathogenic bacteria streptococci, pneumococci, and staphylococci are most commonly found. Colon mixed infection may occur anywhere. The B. A. C. is not infrequently found in pathologic tissues and exudates."

Rosenow, in the same journal, states that "Bacillus Welchii and B. coli were found together with the streptococcus in the gallstones of one case." A similar condition would or could explain cases 1, 2, and 3 of Baugher's series. B. Welchii in 32 cases of goiter, mostly exophthalmic, was found in all but six of the thyroid glands examined. "Cystic ovaries from 25 cases have been examined—B. Welchii was found in all but five cases." "Altogether the B. Welchii, or an organism closely related, has been isolated from various tissues in man 103 times, and from the blood or joint fluids six times." "It exists in the tissues, probably in the spore form and the growth usually does not result except when the oxygen pressure has reached a certain grade." This would explain the slow onset in some cases, as in Bill's, where the infection with the gas bacillus did not appear until the 12th day after the injury, though commonly the incubation period has been considered as short as eight hours and from that to 48 hours. In Bill's case, one of goring with severe hemorrhage, and ligation of the femoral vein, secondary hemorrhage and ligation of the vein a second time, the oxygen pressure was very low owing to the exsanguination, and the devitalization of tissue was extreme.

Rosenow states further: "The fact that the strains grow readily at a certain grade of oxygen pressure without production of gas, and that they produce the characteristic growth with gas formation only under strict anerobic conditions suggests that under special circumstances as a lowered oxygen pressure, increased virulence or growth in symbiosis with other bacteria perhaps, B. Welchii may not be an entirely harmless invader." This would explain why some cases have been reported, as Bloodgood's and Blake and Lahey's where the gas bacillus has been recovered but no gas had been formed.

As to the proportion of gas bacillus infections to all the surgical cases seen, there is some variability. Hewitt in 1911 claims the infection to be quite uncommon, occurring in the ratio of 1 to 1250 surgical cases in St. Louis. Cramp in 1912 computed the proportion in Bellevue Hospital from 1909 to 1911 where there were 5802 cases of trauma and only 9 cases of gas bacillus infection or 1 to 644.

Guthrie in 1913 stated that Lathrop of Hazleton in an active accident service had seen but seven cases. Wainwright of Scranton in another surgical hospital had seen but five. Wilkins, four years Supt. of the Wilkesbarre City Hospital, situated in the heart of the hard coal district, had never seen a case. It was stated that no cases have occurred in the Mayo Clinic in St. Mary's Hospital. These, however, are almost entirely clean surgical wounds. In other hospitals infections with this organism have been reported after a Bassini operation; after hypodermatic injections; saline injections; appendectomy; nephrectomy; urethral operations; gynecological and obstetrical procedure. In the 187 cases mentioned by Cramp 21 were postoperative.

Letters were sent to many surgeons of this city to learn something of the proportionate occurrence of this infection; among those addressed were Drs. Alden, Barbat, Brunn, Carpenter, Coffey, Huntington, Kenyon, Levison, Russell, Rixford, Stillman, Sherman, Taylor, Terry, Weeks. Most of those written to replied in the negative as to having had such infection to deal with; Dr. Huntington mentioned some seen while in railroad practice in Sacramento. Dr. Kenyon had two about four years ago, one dying and one recovering. Dr. Weeks had one case not proved to be a gas bacillus infection, but with crepitation about an appendiceal abscess which recovered without any special treatment. Dr. Taylor from memory thought he had had about eight or 10 cases in his railroad work. Dr. Rixford's cases, seven in number, were all proven culturally. Four recovered. One following a thigh amputation, one free opening and drainage of a wound of the leg, one free opening and drainage of crushed hand, and one in which no special therapeutic measure was instituted, the recovery being entirely spontaneous. In all of the cases there was a mixed infection. In the three fatal cases the infection probably came from the patient's rectum and there were present a great variety of bacteria.

Conclusions: 1. B. Welchii is probably not found in open wound as a pure infection but always associated with other organisms of more or less pathogenicity. 2. The B. Welchii may be a harmful invader of the human organism, but usually only in cases of local or systemic devitalizations, or when acting as a symbiote. 3. The proteolytic effect of B. Welchii is much augmented by the presence in the tissues, at the same time, of B. coli, as this latter bacillus ferments out the sugar, allowing a much more rapid disintegration of the protein, with a consequent increase in the absorption of the resulting putrefactive products, and so a greater toxemia. 4. When present in a wound, this organism causes a peculiar sickening odor, a reddish watery discharge, and under certain conditions, gas and crepitation: and the requisites for a cure are to reduce the edema which makes for increased virulence by reduction of oxygen and production of acid, both tending to an increased autolysis of tissue; by free deep incisions and the use of a solution of sol. chlor. 1% and sod. citr. 2%, or peroxide of hydrogen; and restore the blood and oxygen supply by removal of sutures, if any, exposure to the air, application

of oxygen gas, or peroxide of hydrogen, though it is doubtful if these agents are effective except on the surface. The direct injection of oxygen into the tissues has been recommended, but I know of no series of cases proving its worth and reliability. Of course, interference with, or destruction of the blood supply may be so complete it can not be restored. 5. Amputation, in most cases, does not materially enhance the patient's chances of recovery, where an extremity is involved, but rather militates against it. This is not to be taken to mean that if amputation is indicated from other causes it should be delayed. 6. Plaster casts should not be employed as a first dressing, if at all in those fracture cases with extensive trauma, crushing and known introduction of dirt or other infective material. Anerobic and aerobic cultures from the wound and from the blood should be taken in all such severe traumatic cases. 7. Death is usually not due to the B. Welchii alone, but is more often the result of shock or sepsis, or both, though the gas bacillus may sometimes aid by symbiosis.

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PROGRESS OF OPHTHALMOLOGY IN THE YEAR 1914.

By HANS BARKAN, M. D., San Francisco.

The review of progress in ophthalmology herewith given will confine itself by space necessarily only to the most important new advances in diagnosis and treatment; by choice to those advances most likely to interest the general medical reader. In a specialty of as confined a therapeutic and operative scope as ophthalmology—one as old and in which for many years past a vast amount of work has collected—a year's advances and new facts established are limited. The last year has, however, brought out a few new ideas and has seen the practical working out and acceptance by the profession of some points in the debated ground of the years 1912-1913.

As regards new etiological factors: Parinaud's conjunctivitis, the cause of which has up to now been unknown, seems to have been cleared up by Verhoff, who has recognized in eleven cases the specific microorganism, a leptothrix forming filamentous masses from 10 to 60 m. in diameter, which mass was walled off by an area of cell necrosis such as he had previously recognized as characteristic of the disease. The organism is about the thickness of an influenza bacillus and contains darker dots which may be separated by spaces three or four times the thickness or scattered at longer intervals. They can be brought out by staining with carbol thionin and are best differentiated in tissue fixed with Zenker's fluid and stained by the Gram method, after preliminary treatment of the sections with xylol-balsam. Verhoff's review of the pathology and his very clear demonstration of these cases solves, I think, beyond a doubt, the up to now unknown etiological factor.

In trachoma, strides have been made in the right direction by a good many workers. Lindner of Vienna has succeeded in inoculating the conjunctiva of apes so as to produce the appearance of trachoma except for the formation of a later pannus and scar tissue; this, with material from adult trachoma cases, as well as from the blenorrhea of infants of non-gonococcal character. In both of these conditions, the trachoma bodies are found as well as in the conjunctiva of the inoculated ape. Histologically, the conjunctiva of the trachoma of the ape, of the trachoma of the adult and of the infantile blenorrhea of the non-gonococcus type cannot be differentiated. He has also found the same cell inclusions in the non-gonococcal fresh urethral discharge from both the male and female urethra. The tendency to regard this disease as one originating as a sexual one and later spreading from eye to eye by direct contact is gaining ground among investigators in the subject. Noguchi and Cohn have succeeded in growing this organism in pure culture.

The field of iritis and uveitis was thoroughly covered by Fuchs and De Schweinitz at the last London Congress. Their conclusions are that nearly all cases are due to direct bacterial action or at least to direct toxic effect. The coincidence with muscular rheumatism, "rheumatic myalgia," gout and chronic arthritis may depend upon a common cause, as is certainly true for instance in diabetes. Latent gonorrhea seems to be more important than previously thought, as a few undoubted cases have been promptly cured by injection of gonococcus vaccine obtained after finding gonococci in the urinary sediment of cases whose attack had been a good number of years before.

Lang, among 215 uveal inflammations, describes 139 as due to pyorrhea alveolaris. It may be caused by a hidden alveolar abscess. The etiological factor in sympathetic ophthalmia is still a debatable ground. In order to obtain the clinical syndrome and the pathological changes, which are absolutely definite ones, a perforating injury of the globe has always been deemed a sine qua non. Meller has, however, found cases of severe iridocyclitis, bilateral, leading to the clinical appearance of sympathetic ophthalmia, which pathologically showed the typical picture of sympathetic ophthalmia as well as some cases of sarcoma of the choroid which showed, in addition to the tumor, the definite histological picture of sympathetic ophthalmia. The

most generally accepted opinion at present is that it is an anaphylactic phenomena and that the second eye is sensitized to whatever may be the original cause by the destruction of the pigment of the first eye. In this connection, it is interesting to note that the blanching of the cilia and of the eyebrows, that is, a destruction of the pigment in these hairs, has been noted in several cases during the last year.

A new entity has been brought forward in the disease called angiopathia retinalis juvenilis, in which small and large hemorrhages take place in the retina followed by later proliferation of connective tissue and changes in the blood vessel walls of the retina, and occurs, as the title suggests, in fairly youthful individuals. In practically all of these people, some tuberculous latent or active process has been found and the only ones responding favorably to treatment have been those upon whom rigid tuberculin therapy has been carried out.

In operative procedures, the year has seen the firm establishment in this country of Elliott's operation for glaucoma, following the visit of Colonel Elliott, who trephined 135 eyes in 28 different clinics, convincing many American surgeons of the simplicity and value of the operation. We have in this operation a new method of relieving glaucoma; in some cases of permanently curing it. It consists in drawing a conjunctival flap from above, down to and beyond the corneal margin; in trephining a hole through the eye, approximately two-thirds lying in the cornea, one-third in the limbus; and performing through this hole an iridectomy in those cases in which the surgeon choses to do so. The hole is then covered by drawing the conjunctival flap back over it. In many cases, this produces a permanent opening through which the aqueous escapes to be taken up by the lymphatics of the conjunctiva. Tension, if there be no complicating factors, sinks to normal or below it and seems from the experience of the last three or four years to stay low or normal in the majority of cases. The difficulties of the older operations, namely, escape of lens and vitreous; a chamber through which it is hard to pass a knife and impossible to get in a lance: reduction of vision by traumatizing the capsule, choroidal hemorrhages, are in some instances entirely eliminated, in others relieved materially in this operation. Its main and only drawback seems to be infection of the eye which may at any time later develop through the flap, which in many cases is thin and cystoid. The number of eyes lost by later infection is increasing but the number is still very small as compared with the total operated upon.

In cataract, we have seen the adoption of Colonel Smith's intracapsular operation by a good many American surgeons who have had the opportunity of working with Smith and of acquiring their experience in a large number of cases. The operation leaves an ideal black pupil, leaves no membrane or cortex to be incised later, avoids postoperative iritis, and can be performed as well on an immature as on a mature cataract. There are many things to be said against it into which there is not space to enter here. It is being performed in America in the hands of a number of skilful men who have learned their technic from Colonel Smith and whose results we will all be interested to see in the course of the next few years.

In dacryocystitis, West's intranasal operation, in which the sac is broken into from the nose and drains down through a permanent opening, has been an improvement on some of the other intranasal methods. I do not believe it, however, to be as generally applicable as an external incision with removal of the entire sac. This last permanently prevents infection of the conjunctival sac and of any operation on the eye, and it is just in cases of cataract and other operations that we must be sure of not having a suppurating cavity communicating with the eye and avoid an open road for the nasal bacteria upward. In the acute cases treated usually by incision, drainage and hot applications, I have seen West's method work with marvelous rapidity, so that cases ordinarily not relieved for weeks, have been dismissed frrom the hospital at the end of one week without any sign of having had a suppurative dacryocystitis.

The operations for conical cornea have been improved by the addition of Elliott's trephine and a series of very successful cases have been reported in which, after or before cauterizing the apex of the cone, the globe has been trephined just as in glaucoma in order to reduce the tension, which, though not high for a normal eye, may in these cases, even though normal, be too much for the cornea and aid in producing the conical distortion.

Retinal detachment is about as hopeless a condition as ever and as unrelieved by any type of operation attempted as before. In an extensive inquiry by Vail among 281 American oculists, in whose experience something like 2,500 cases of detachment were included, 250 report not having seen a permanent cure, 31 have met with cures; 41 cases are said to have recovered. It seems that we are still a long way from being able to relieve this condition.

In retrobulbar neuritis, occurring with acute onset, usually one-sided and where symptoms of multiple sclerosis are not found, the opening of the accessory nasal sinuses is imperatively called for even in the absence of any sign of their involvement. Many cases have been reported by men with large clinical experience in which these cells have been found completely negative, but where a great and sudden improvement in the condition after they were opened occurred. Where cells have been found with turgid mucous membrane, or filled with polyps, upon their removal the ocular symptoms were relieved promptly. The feeling has arisen that, in these cases, prompt rhinological interference is justified in the absence of any evident sign of accessory nasal sinus disease.

Medicinal therapeutics seem to have received a decidedly new and valuable acquisition in ethylhydrocuprein. This is used in pneumococcus ulcers of the cornea and seems to be specific for pneumococcus infections. The application of a 1-2 per cent. solution on a pledget of cotton to the surface of the ulcer for a period of five to ten minutes, repeated, if necessary, in intervals of three

hours, is the usual mode of procedure. The reports from several European clinics as regards the prompt cure of cases in which we formerly had to resort to the galvano-cautery with resulting extensive scar formation are very favorable. It is to be noted, however, that the really bad cases were treated as before by galvano-cautery or Saemisch Section.

Salvarsan has been used extensively and not only in lues. Some cases of sympathetic ophthalmia cured by injections of salvarsan have been reported, to be taken, I believe, cum grano salis. The fear of giving salvarsan in active luetic optic neuritis and the belief that it might react unfavorably on the normal optic nerve has nearly disappeared. Syphilitics, to whom salvarsan has been administered, have reached immense numbers; the reports of optic nerve complications are minimal in number and may very well not be attributed even in these cases to the injection. In interstitial keratitis, salvarsan has been a failure, but then so has mercury. One sees cases pursuing their usual course in spite of all treatment. In many cases, we see a well mercurialized child developing the lesion in its second eye, weeks, months or years after the onset of the first one, just as if no anti-luetic treatment had been resorted to. It is true that salvarsan diminishes, for some reason, the photophobia, blephoraspasm and lacrymation from which these cases suffer in the acute stages. The process seems for a week or two to advance less rapidly than might be expected, and then goes on in its usual fashion.

In the unhappy children where glioma of the retina develops in both eyes and who are seen in this condition, the surgeon as a rule does not care to remove both eyes, nor will the parents allow this, nor, as a matter of fact, is much to be gained by it. X-ray in erythema doses seemed, in one case of Axenfeldt's, to have stopped the further development of the tumor during a period of one year. If the X-ray should offer nothing more than the stoppage of the mutilative process occurring in these eyes as the tumor develops in them, it would be a valuable addition to our therapeutic methods.

We have seen one entirely new method of diagnosis, Salzman's indirect ophthalmoscopy of the iridic angle. This method is extremely hard to acquire and is applicable only to a few specially suited cases, but it is an ingenious addition to the use of an instrument, the technic of which seemed to have been exhausted years ago. Measuring the tension of glaucomatous eyes by means of a tonometer has proved itself invaluable; not that it decides when to operate or whether to operate as much as that it serves to keep good control of the tension in eyes treated medicinally and to check up the course of eyes after operation. In methods of taking fields of vision, Bjerrum's chart has come to be an indispensable part of the ophthalmologist's appliances. It consists of a black surface painted on the wall or a black chart on which fine white and color marks are passed about at the discretion of the surgeon. The patient, sitting at about a meter's distance and looking at the center of the chart, has a much wider visual angle than with the ordinary perimeter and notices defects in the field much more readily, due to the distance and projection of the mark on the retina, which is so small that even small scotomata have the object fall within them, and not overlap their boundaries. It is especially valuable in mapping out the enlargement of the blind spot, which has been found to be a most valuable sign of some hidden accessory nasal sinus disease. Uhthoff noticed it in the early stages of many cases of brain tumor.

Occasionally one meets with a choroidal hemorrhage or a sub-choroidal hemorrhage and detachment of the retina and choroid where it is difficult to make a differential diagnosis with sarcoma of the choroid. In this instance, it has been suggested to examine the urine for melanin and this has, in two instances, proved valuable.

Lastly, as regards the present status of choked disc in brain tumor, a subject of constant interest and importance to the internist, neurologist, surgeon and ophthalmologist; the most complete review and most carefully worked out set of conclusions are to be found in the transactions of the Ophthalmological Society of the United Kingdom, Vol. XXXIV, 1914, in the Bowman Lecture by Professor W. Uhthoff entitled, "Ophthalmic Experiences and Considerations on the Surgery of Cerebral Tumors and Tower Skull," from which I take the following quotations:

Uhthoff notes the enormous preponderance of brain tumor in the etiology of bilateral choked disc (about 74.6 per cent. of all cases). He defines choked disc as a prominence of the papilla of at least 1.5 to 2 D. Unilateral choked disc he observed in 4.1 per cent. of his cases, not always on the same side as the tumor, and in the proportion 7 to 3 (66% ipsolateral), and says it is by no means always possible in tumor of the cerebrum to draw the conclusion from bilateral choked disc with greater prominence of one side that the seat of the tumor is situated on this side; only in 56 per cent. of the cases in question was the brain lesion on the side of the greater choked disc.

These results differ essentially from Horsely's. "Bilateral choked disc or optic neuritis, but with more prominence in one eye, was found to correspond with the situation of the cerebral tumor on the side of the greater neuritis in 73 per cent." This to us is an interesting statement. "More pronounced retinal hemorrhages on one side accompanied by unilateral choked disc, the result of a cerebral tumor, justifies the conclusion that the seat of the tumor is on the same side. (Horsley). In our material the opposite is as nearly often the case. Unilateral choked disc is of greater importance for the localization of brain abscess than of brain tumor. In cases of cerebral abscess with choked disc, the latter was unilateral in 13 per cent. and in four-fifths of the cases on the same side as the abscess." As regards the fields of vision, "the field of vision was practically about normal in 8 per cent. of my observations; in about 30 per cent. there existed as the only anomaly an enlargement of the blind spot. The other fields were more or less markedly involved. Further-

more, I cannot quite agree with the statements that have been made respecting a peculiar alteration in the limits of the color fields in the sense of an enlargement, especially of the red field and the shifting of the color boundaries towards and through each other, producing even an inversion of the limits of the color fields (red farther out than blue). In cases of intracranial disease, when sight is still good and the fundus normal, I do not think it is right from such an anomaly of the color sensation to draw the conclusion that choked disc will ensue."

I might mention that the importance of the interlacing fields which so many made themselves find after Cushing's announcement, has been during the year extremely modified by Cushing himself in a small footnote in an article by himself and Walker. Further, "in about fifty per cent. of instances where the operation was performed comparatively late in presence of already developed atrophy, a considerable diminution of vision or of the field of vision and further loss of sight occurred in spite of operative procedures. This fact admonishes action to an early operation. Again, only five per cent. of cases diagnosed as brain tumor were operated upon in presence of negative ophthalmoscopic findings so that on the whole, the existence of changes in the papilla, especially of choked disc, was the most important indication for operation."

To the reader whose interest in ophthalmoscopic advances goes somewhat further than can be satisfied in as short and incomplete a résumé as this one necessarily is, I would recommend the article by Jackson in Progressive Medicine, June 1914, or Jackson's Year Book for 1913 and that of 1914, which is still to appear.

SUGGESTIONS OF BILIARY TRACT SURGERY FOR THE GENERAL PRACTITIONER.*

By FAYETTE W. BIRTCH, M.D., San Francisco.

That the general practitioner is today doing more of his own surgical work than he formerly did is a matter of common observation. Reduction of medical fees, insurance control of accident cases, contract practice, greater competition due to the wide extent of reciprocity and an increase in the number of persons entering the medical field, combine to augment the difficulty of earning a livelihood. In addition to these causes, the increase in self-medication of minor complaints, greater knowledge of prophylaxis, and the removal from the hands of the medical men of those slight functional complaints allowed to recover under the supposed beneficial ministration of various kinds of healers, have been instrumental in removing from the domain of the legitimate medical man some of his former sources of revenue. Thus the work that he is called upon to do lies in the more difficult regions of medical and surgical practice. This has brought about the necessity for a readjustment of the physician to his new environment.

His better preliminary medical education and increased postgraduate experience enable the physician to cope with problems arising in surgical practice with no inconsiderable success. Another advantage is his acquaintance with responsibility, his wide range of experience making the general practitioner more self-reliant and better able to understand and cope with individual peculiarities of his patient. On the other hand, it must be agreed that surgery under these conditions cannot be of the highest order, though the family physician might have become a surgeon of renown had he had the advantages of a large surgical experience. In a great measure, the operator is made by his opportunities. If a surgeon performs five hundred appendectomies a year, he certainly would be a much better operator for this particular condition—other things being equal—than if he had only fifty cases in the same length of time. However, such extensive surgical experience is afforded to but few.

The general practitioner who admits that he is not as clever a surgeon as he might have been, will realize that he must produce average results if his surgical career is to be a success. It was with the idea in view of affording these men opportunities of following surgical and medical progress that the St. Luke's Hospital Club was established nearly two years ago. If the general practitioners are not to have the opportunity of large clinical material, they have a substitute in banding themselves together for co-operative study of methods and results of those more favorably situated. In this paper I aim to call attention to some of the responsibilities incurred by the general practitioner in doing surgical work and to show that he must prescribe for himself some educational scheme which may enable him to succeed in this difficult field. He must recognize wherein he is handicapped in order that he may be better prepared to avoid some of the pitfalls. Today I wish to add my part by giving you a few notes on biliary tract surgery.

In preparation for this specific kind of work, the general practitioner will naturally look to the writings of the foremost men on biliary duct diseases for instruction. In these writings he will read much about the necessity of early diagnosis, the proper type of operation to be selected in a given case, the different pathological classifications, the various theories as to physiology of the gallbladder, and the different causes of immediate or remote mortality. Yet from all of this he will not be able to glean much that is definite.

Authorities continually criticize the family physician for not recognizing biliary tract disease in its incipiency, and maintain that patients are brought to operation only when they present symptoms of late complications such as pain, tenderness, jaundice, fever, chills, sweats, or passing of stones in the stool. But how is the medical man to recognize the disease before these symptoms develop? It is all very well to say when these cases should have come to operation, just as it is easy to say that if cancer of the stomach be operated at the time the primary cell is dividing, a cure will re-

* Read before St. Luke's Hospital Clinical Club, February, 1915.

sult. What are writers teaching of the early symptomatology of biliary tract disease?

Read Dr. Herbert Moffitt's paper on the Symptomatology of Gall-bladder Disease, published in the California State Journal, Vol. XI, No. 8, and you will likely have as good a description of the symptoms of biliary disease as has yet been published. The following is Moffitt's description of the early period:

"We realize to-day that 'latent' cholecystitis, especially when combined with cholelithiasis, rarely exists, and we recognize the affection at a much earlier age than formerly and before late complications like colic and jaundice occur. The patient with gall-bladder disease complains most often of a vague upper abdominal sensation and gastric distress. Flatulence is extremely common and a persistent complaint of gas in a stout woman who has had children should arouse the suspicion of gall-bladder disease. There is frequent sudden distension after eating, often painful and requiring loosening of corset or clothing. This weight and pressure are relieved by belching. If persistent, they may amount to actual pain. A sense of constriction and interference with deep breathing may be noted. A sudden 'catch' may be felt on the right side when a deep breath is attempted. There may be a sensation of heaviness or dragging in the right hypochondrium, at times a feeling as if the gas or stomach content were forced against an obstruction at this site, a sense of relief and relaxation when gas is felt to pass through this obstructed place or 'lump.' These symptoms usually come suddenly. They may be brought by errors in diet or alcohol, may be caused by over-tiring, by mild infections, may be precipitated by menstruation, by anger, excitement or worry. Frequently, however, they can not be referred to indiscretions in diet, nor do they have any relation to the time of taking food. They appear without rhyme or reason; they often occur at night. Mild general symptoms may accompany this recurrent 'dyspepsia.' There may be dullness, drowsiness, lassitude, aching in the back and extremities, occasional chilliness or even a brief chill. Labial herpes is frequent. There may be an ephemeral rise of a degree or two in temperature, rarely there is slight persistent afternoon temperature extending over weeks or months. Hyperacidity often marks this gall-bladder dyspepsia. Many patients complain of burning in the upper abdomen, of distress and pain from pylorospasm. Constipation is common as is also a sudden distension of the abdomen from intestinal relaxation. Mucous colitis is not usual unless there be adhesions of gall-bladder and colon."

The symptom complex described above would likely be accurate enough to enable men of much experience in this class of disease to arrive at a correct conclusion in a large percentage of cases. It is doubtful, however, if such a description would greatly assist men of moderate experience. Records from the Mayo Clinic show that the earlier signs of biliary disease are very misleading. Thus it will be seen that until the internists can arrive at a more exact method of diagnosticating early cases the general practitioner will be called upon to treat the advanced cases, and this means complications, difficult operative procedures, higher mortality, even in the hands of the most experienced, and more likelihood that the patient will not be completely relieved.

When he seeks for information regarding the type of operation to be performed in a given case, he will likewise be disappointed. A few years ago it was considered proper to drain routinely nearly all gall-bladders. This was accomplished by plastering tightly against the abdominal wall the gall-bladder, in which a tube had been inserted. Symptoms of adhesions followed this method, so it is now little used. It was next advocated that the gall-bladder be sutured tightly about a tube and then dropped back into the abdominal cavity. Even this method, in many cases, did not seem to accomplish the desired results. It has been our observation, in taking the history of patients who have had their gall-bladders drained, that many still complain of chronic dyspepsia. I believe that this is a general observation. This raised the question as to the advisability of performing cholecystectomy as a routine procedure. Surgeons at once began to express themselves on the subject of cholecystectomy *versus* cholecystostomy. Some maintained that cholecystectomy is the operation of choice, while others held that cholecystostomy is to be preferred. The Mayos, a few years ago, were the chief advocates of cholecystostomy, but now prefer cholecystectomy, and remarked in their clinic a few weeks ago that they were removing about 80 per cent. of the gall-bladders. It would seem that the authorities on this kind of surgery are beginning to be sufficiently acquainted with the biliary tract pathology to be able to forecast the outcome of a gall-bladder infection. A gall-bladder diseased to the extent that drainage does not check the pathological process, and the patient returns with signs and symptoms of adhesions, obstructions, biliary cirrhosis, pancreatitis and other complications, should have been removed, and the surgeon was guilty of a mistake in surgical judgment when he drained it. On the other hand, if the patient's gall-bladder will return to normal by simple drainage, why do more? No set of rules can be set down for the routine drainage or removal of the gall-bladder.

He who operates must recognize that he must be a trained gall-bladder pathologist in order that he may accurately prognosticate the outcome of a gall-bladder when drained. If he fail in this he must hold himself responsible for a mistake in surgical judgment. This responsibility will force him to follow to the laboratory a specimen of tissue removed from the gall-bladder which he has drained, in order that he may ascertain microscopically how far the inflammation has extended; by comparing the microscopical section with what he saw at the operating table, and by following his case year after year to learn what symptoms were not relieved, he will in future be able to deal with a like case more scientifically.

It is an easy matter for a surgeon in a medical center to follow his cases so carefully, but it may be difficult for the family physician. Nevertheless, if the family physician is to obtain average results he must establish some follow-up system whereby he will be able to know wherein his operative procedures have failed. He must keep up with the literature, even though it be in a chaotic state, and since his practice is too small to afford him enough material to familiarize himself with the pathology, he must spend his vacations in laboratories and

clinics studying large series of pathological specimens.

Pathologists have, for a long time, insisted that the surgical diseases of the biliary tract which have been classed as entities are only end results of gall-bladder infection. Not infrequently articles are written by surgeons on the subject of biliary tract disease which focus the attention of the reader on gall-stones, as if gall-stones were a disease producing all the complications. The reader is led to believe that the removal of the stone will result in a cure. They discuss acute and chronic cholecystitis, hydrops, empyema of the gall-bladder, large gall-bladder, contracted gall-bladder, perforated gall-bladder, purulent cholangitis, biliary cirrhosis, and chronic pancreatitis in such a manner as to leave the reader with the impression that gall-stones are responsible for all these conditions. He is seldom left with the idea that these are all end results of gall-duct infection. If the old classifications could be discarded, and this idea of infection made clear to the minds of all who do biliary duct surgery, there would be less attention paid to gall-stones (a complication), and more to the underlying cause. The operator would not then be chagrined when no gall-stones are found at the operation. The gynecologist would be less prone to pronounce the biliary tract normal when he is unable to palpate gall-stones. He would ultimately learn to attach more importance to the finding of enlarged lymph nodes which drain the biliary tract, and to hardening of the head of the pancreas.

The ideas on the physiology of the gall-bladder have also been very confusing. It has been considered a storage place for the bile, a safety valve, and an organ for secretion of mucus. It is not unlikely that the gall-bladder has other functions than these. Of late the experiments of Rost on duodenal fistula in dogs are engaging the attention of surgeons. The summary of Rost's paper (Mitteilungen aus der Grenzgebieten der Medizin und Chirurgie, 1913) is worthy of special consideration. The emptying of the bile into the bowel is under the control of an extremely fine reflex nervous mechanism, the anatomic factors being the smooth muscles of the gall-bladder, bile-ducts, and sphincter of the duodenal papilla, which may be made to relax and contract by various agents. Bruns, in Howell's Text-book of Physiology, states that no bile appears in the duodenum as long as the stomach is empty. The act of eating and of swallowing produces a stimulus which effects a flow of from 4 to 14 cc. of bile into the duodenum, and when the food is discharged from the stomach into the duodenum, the amount of bile then discharged is very great, depending somewhat on the substances ejected from the stomach. In accordance with these facts, a persistent fistula from a gall-bladder will sometimes heal if the patient is fed at frequent intervals. Rost demonstrated that after cholecystectomy the bile first drops into the duodenum but eventually there comes an intermittent emptying, as happens when the gall-bladder is intact. He also brought out the fact that after cholecystectomy the biliary ducts may become much dilated and that the stump of the cystic duct may become so large that it functionally serves as a new gall-bladder. He explains dilatation of the ducts on the ground that the sphincter of the papilla is strong enough to hold back the bile until it accumulates sufficiently to stretch the ducts. It may therefore be good surgical procedure to preserve as much of the cystic duct as possible.

An analysis of the causes of immediate mortality from various statistics in biliary duct surgery discloses the fact that different operators have widely different percentages of deaths. This again emphasizes the fact that biliary duct surgery has not developed to such a degree as to universally produce the best results.

Immediate mortality depends upon the complications, length of time the disease has been present, and the gravity of the symptoms prior to the operation. When the disease is confined to the gall-bladder, mortality is not more than one per cent. The Mayos, in 1911, had a mortality of two per cent. when the disease was confined to the cystic duct, and about eight per cent. when the common duct was involved. This varied from three per cent. in the quiescent cases to 25 per cent. in cases of complete obstruction of the common duct. When malignancy is added to the case, the immediate mortality jumps to 78 per cent. Deaver's mortality in 1910 and 1911 was 6.6 per cent. for all cases. Stanton's statistics (New York Medical Journal, December 14, 1912) state that in 90 cases observed for three years there was a mortality of 6.6 per cent. under medical treatment. He states that complete cures through surgery occur in 80 per cent. of the cases, and the majority of the remaining patients are so greatly benefited as to be well pleased with the operative relief. The mortality in 4,000 cases in the Mayo Clinic was 7.75 per cent., while in 30 American state hospitals and 25 New York state hospitals in 1,688 collected cases, there was reported a mortality of 8.25 per cent. Stanton thinks that eight per cent. is too high and should be reduced at least one-half. He also suggests that this high mortality is due to the fact that many of the operators are amateurs or only occasional operators; that they have either used bad judgment as to the time when the patient should be operated upon, or that unnecessarily long and complicated operative procedures have been selected. It is hardly necessary to mention the fact that with little handling of the abdominal viscera, speedy operation with small amount of anesthesia combined with Crile's anoci association, the mortality should be reduced. The mortality depends upon the type of operation which is performed. It is least in cholecystostomy, more in cholecystectomy, and most in choledochotomy. It is likely, however, that mortality is increased not so much by the operation as by the severity of the disease that demands these procedures.

Just a word in closing as to methods of treating these conditions. Routine operations cannot be indicated in any operative procedure; yet the generally accepted types must be well known before the operator can vary his procedures to fit the case. Serious lesions of the heart, kidneys and lungs, extreme old age, anemia, and slow coagulability of

the blood are contra-indications to operation. Too frequently the surgeon neglects to sum up his operative risk until the patient is off the operating table and in bed. Not until then does he begin to worry about the shock, the condition of the heart, kidneys and lungs, and the possibility of hemorrhage. As soon as the operator comes to realize the necessity of having a medical man examine all his cases before submitting them to operation, many bad operative risks will be rejected and the immediate mortality reduced. Cholecystectomy is indicated in all cases of malignancy, hydrops, chronic empyema when the cystic duct is not patulous, gangrene of the gall-bladder, large thick walled gall-bladder, extensive adhesions, and when many small calculi are imbedded in the gall-bladder mucosa. The drainage of the common duct following cholecystectomy is indicated in certain conditions (H. Kehr, Archiv. f. klinische Chirurgie, 1912, Vol. 92, pp. 26-39). These are when the head of the pancreas is involved, when the common duct is thick and distended, when there is a history of icterus, colic, chills, sweats and fever; when a considerable length of the cystic duct is left; and when many small stones are found in the gall-bladder and cystic duct, causing suspicion of similar ones in the common duct. The drainage of the hepatic duct is recommended when cloudy pus oozes from the stump of the cystic duct, when the liver is enlarged, when it is indurated, and when cirrhosis is present.

Whether cholecystectomy should be done in the presence of acute suppurative cholecystitis confined to the gall-bladder is debatable. Crile (Surgery, Gynecology and Obstetrics, 1913) thinks that in most cases of acute infection the gall-bladder should be drained, and later, if required, a cholecystectomy performed. Deaver recommends cholecystectomy as a primary operation. For the operator who has only an occasional biliary case, it is likely that the two-stage operation will be found more satisfactory. In the mild chronic inflammatory conditions of the gall-bladder, if the operator is convinced that cholecystostomy will relieve the infection and prevent further pathologic progress, it is the operation of choice.

In conclusion I wish to emphasize the fact that at present economical factors seem to be forcing the general practitioner to accept for treatment many of those cases which formerly were referred to the surgeon. Owing to the rapid advancement in medical science, the thorough preparation necessary for the assumption of this responsibility is becoming more difficult, and of necessity the general practitioner must plan some educational scheme for the study of progressive methods and results. He must favor and court consultation with men better informed than he, so that the best interest of his patient may be safeguarded. The consulting surgeon should face these conditions as they exist and must often seem to humiliate himself by amicably playing the part of an adviser or assistant at the operating table to an inferior operator, to the same end that the best interests of the patient may be conserved; for, after all, the welfare of the sick is the fundamental problem to be considered. Whether the individual falls into the hands of the general practitioner or of the surgeon, the whole profession is to a certain extent judged by the outcome. In humiliating himself (if he so considers it) the consultant may be consoled by the thought that he has aided in improving the skill of a member of his own profession and has thus assisted in elevating the tone of the whole.

SOME RECENT STUDIES IN GASTRIC SECRETION.*

By ROBERT POLLOCK, M.D., San Diego.

The advance along the line of our knowledge of gastric secretion has been somewhat intermittent; long periods of quiescence intervening between the few periods of active progress, which were of sufficient prominence to stand out in bold relief. Just such a period, however, we are passing through at the present time.

After accepting the results of any research worker as proven, we are very prone to consider them as final: and so long as they reasonably fulfil the requirements of our daily problems, we are content to believe that they leave nothing to be desired.

In our secretory study of the human stomach, we have, for many years, followed, with more or less complacency, the method of aspirating and analyzing the contents of that organ at the end of an hour following a test-meal consisting of bread and water. With the exception of the "motor-meal," and an occasional meal directed to clearing up some special point, this has been our routine method of study; and the results so obtained we considered as fairly representing the type of secretion of the individual so examined. These results also were compared with certain standards which we had accepted as representing normality.

Doubtless many workers have at times questioned the accuracy of the results so obtained. The question naturally intruded: does the one-hour specimen fairly represent the height of activity of the gastric juice, or does it even serve to point the type of secretion, whether normal, over-normal or under-normal for the individual under observation? Nevertheless, with one or two exceptions, previous to the year 1914, no observations had been published, showing a more detailed study of the stomach contents, at varying periods following a test-meal. Those published, while not convincing, tended still further to strengthen our doubts as to the reliability of the standard methods. Obviously one obstacle in the way of a broader study of the subject, was our somewhat crude method of obtaining the material for analysis.

While the inventive genius of Dr. Max Finhorn paved the way for a better method when he devised his so-called "duodenal tube"; still the full possibilities attached to its further development and use were not emphasized until the summer of 1914, when Drs. Rehfuss, Hawk, Bergheim and their associates, working at Jefferson Hospital in Philadelphia, began an elaborate study of the subject, which bids fair to revolutionize our views on

* Read before the San Diego County Medical Society, March 2nd, 1915.

gastric secretion. These workers first modified the "Einhorn tube" to suit their ideas of the requirements of the work. This was done by enlarging the capsule or "bucket," and changing its shape. Also the windows or openings were enlarged to equal the diameter of the tubing used. The tube, as they use it, and as it is now being used by many men throughout the country, may roughly be described as a soft rubber tubing about 125 cm. long, with the caliber of a No. 8 French scale catheter (about 3 mm.).

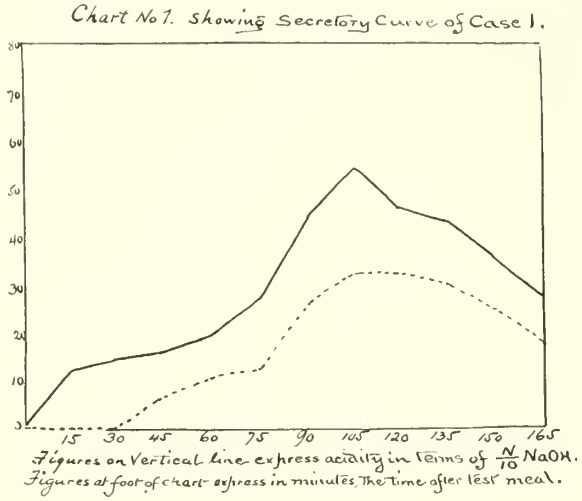
Chart No 1. Showing Secretory Curve of Case 1.
80
70
60
50
40
30
20
10
0
15 30 45 60 75 90 105 120 135 150 165
Figures on Vertical line express acidity in terms of N/10 NaOH.
Figures at foot of chart express in minutes the time after test meal.

CHART I

To the end intended for insertion into the stomach, is attached an olive-shaped, hollow bulb, about 15 mm. long, perforated with four longitudinal windows, about 12 mm. long and 3 mm. wide; thus corresponding to the caliber of the tubing. The bulb is of hard metal, in order to resist erosion, thus permitting its retention in the stomach or duodenum for long periods of time. The weight of this metal also favors the ready passage of the bulb, when the patient is in the upright sitting position.

This tube obviously fulfils many of the indications of a practical apparatus. Its size and flexibility, coupled with the weight of its bulb, enables it to be readily passed with a minimum amount of discomfort to the patient; while, once in position, it may be left there indefinitely with almost no inconvenience to the patient, who is able to breathe, talk, and swallow fluids with perfect freedom. The windows in the bulb are of such a size that they rarely become obstructed with mucous or food particles; while aspiration of the stomach contents can readily be effected with an ordinary glass piston syringe having a catheter point. Thus it becomes a simple matter to withdraw for analysis portions of the stomach contents at such intervals, and for such a period of time as the observer desires.

The secretion may thus be studied closely from the time of the test-meal until the stomach has completely emptied itself, thus furnishing the data for a secretory curve or chart, which, at that particular time, must represent closely the work of that particular stomach.

I thus particularize as a prelude to the following statement: While the physiological stomach of any given individual will usually register its work by curves, bearing a close resemblance to one another, the same stomach, after becoming pathologic, not only shows a curve of a different type from its former normal one, but may show distinct variations in type from week to week, in accordance with changes in the pathologic factor.

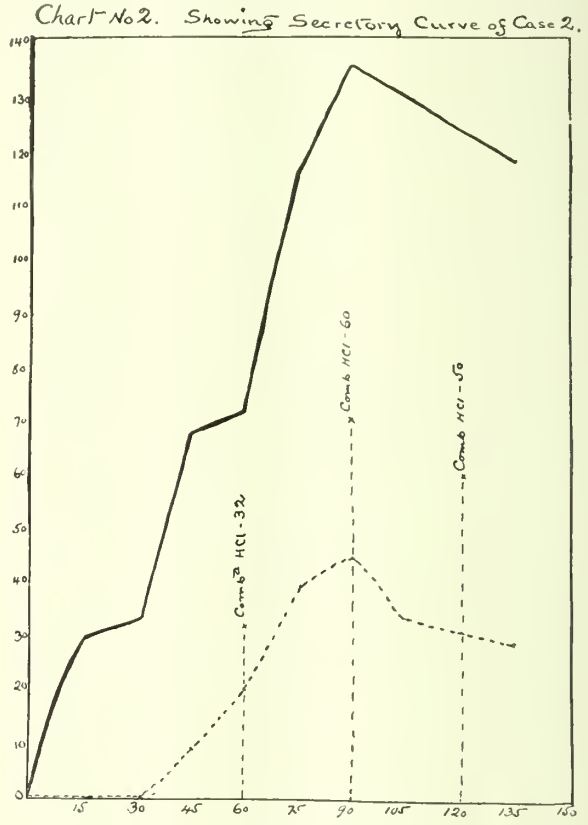

CHART II

This rule seems to apply equally well when the pathologic factor is present in the stomach itself, and when it resides in the nervous system or in remote organs. The word pathologic is used in its broader sense, as applying to either structural or functional change. With this in mind, it is reasonable to believe that we can follow intelligently the process of disease, represented by abnormal stomach secretion, only by making repeated examinations. This, as well as other statements in the paper, I wish to illustrate by cases, drawn from my own work, by showing their charts, and endeavoring to interpret them as logically as possible. If my deductions do not always appeal to your reason, try and remember that one of our daily occupations is drawing erroneous conclusions: and that one purpose of a paper before our society is to invite criticism and bring out divergent views.

In all the charts shown, the Boas-Ewald test-meal of bread and water was used; and all acidities

are expressed in terms of $\frac{N}{10}$ Na OH, although for the sake of greater speed and accuracy, $\frac{N}{100}$ Na OH solution was used for titrating. The upper or solid line on the chart represents the total acidity curve, the lower or dotted line that of the free HCl. The figures under the base line represent in minutes the intervals of aspiration, or rather the number of minutes after the close of the test-meal, at which the aspirations were made.

Chart No. 1. Expresses the secretory curve of Case No. 1, a woman, aged 49 years, who gave

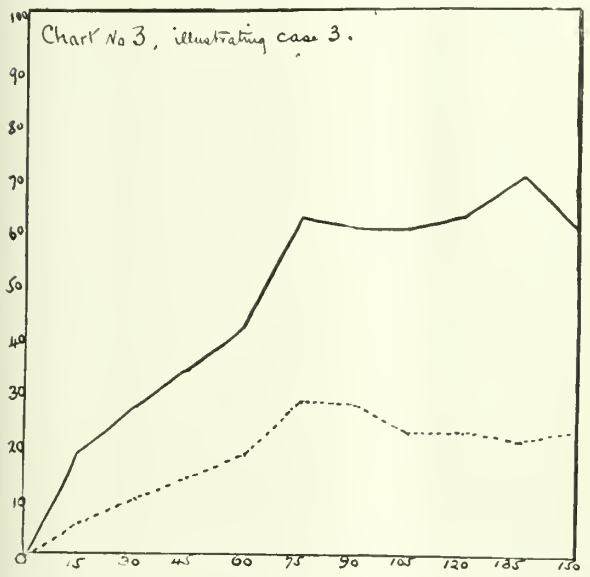

CHART III

a clear history of hyperchlorhydria, of nervous origin, with symptoms covering a period of more than 30 years. Her statements regarding her suffering, the men of standing who had treated her, and the remedies that had given relief, left little doubt in my mind about the correctness of the diagnosis of nervous hyperacidity; and yet the analysis of the one-hour stomach content would scarcely point that way to-day. In fact it would only tend to confuse us. The fractional study, however, is not without interest. In the first place, it points to a secretion that is elaborated slowly, reaching the height of its activity only after one and three-quarter hours. This, when considered with the history, and the present very moderate acidity curve, suggests to me a secretory apparatus, which from long years of overactivity, is now beginning to show the natural result in the form of lessened functional power. If this reasoning is correct, we shall probably find this case gradually progress to complete achylia. In the meantime, however, there are other points to be considered. Before giving the test-meal, the stomach was completely emptied of its fasting contents, which consisted of 75 c.c. of food-fluid, having a total acidity of 11.8 and a free HCl acidity of 5.6; and it seems to be this fasting secretion which at present is causing her discomfort. Obviously this stomach's secretory work is distinctly not physiologic, and demands careful watching, with the use of appropriate remedies when indicated. The sluggish emptying power, exhibited by the organ taking as it does two and three-quarter hours to reach a point corresponding roughly to its fasting state, suggests that its musculature, as well as its glandular mechanism is failing; and indicates such measures as will tend to improve muscle tone. The chemical and microscopical study of the fasting contents fails to give any evidence of structural change.

Case 2, illustrated by chart No. 2. A woman, 29 years of age, with a distinct history of nervous overstrain for years. Her symptoms suggested a hyperacidity, probably accompanied by ulcer of mild grade; and the fractional study tended to confirm this, although the microscopical study of the fasting contents indicated a gastritis. I am inclined to look upon this case as one of ulcer superimposed on a previous gastritis; the complex being symptomatically represented by the symptoms of high acidity, and the treatment dictated by the ulcer and the acidity.

The point that I wish to emphasize is the im-

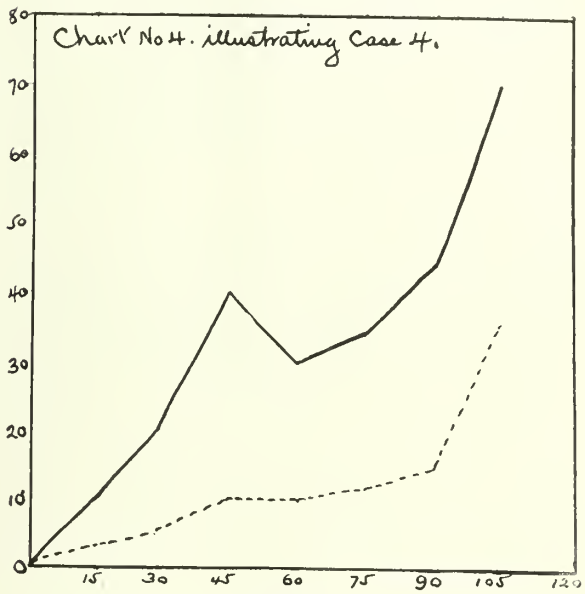

CHART IV

possibility of getting any comprehensive idea of this case from its chemistry at the end of an hour following the test-meal. At that time, the total acidity was 72, and the free HCl 20, or roughly one-half what it attained in another half-hour. The fasting stomach in this case contained 35 c.c. of food-free fluid, containing much mucous and a small amount of bile. Its analysis showed a total acidity of 50, all of which proved to be combined HCl. This case in contradistinction to the previous one, elaborated very rapidly a highly acid gastric juice; but it must be borne in mind that both the patient and her condition boasted fewer years than in the case of No. 1.

Case No. 3, illustrated by chart No. 3, is similar in some respects to the one just described, but came under observation before I began using the fractional method of studying the secretion. Thus I found it considerable of a puzzle for some time. It records the history of a young man, aged 25 years, of slightly neurotic type, with symptoms suggesting mild hyperacidity and accompanied by bile regurgitation. The first analysis of the one-hour specimen showed a total acidity of 42, and a free HCl of 18; certainly not strongly corroborative of my suspicion of a neurotic hyperchlorhydria. Even after the bile regurgitation, which is not a common accompaniment of low acidity, had been cleared up, his symptoms of stomach distress remained; and it was not until the fractional study had been applied that I was able to see the secretion in its true outline: that of a slowly forming hyperacidity. Since that time he has progressed

rapidly toward recovery, and is to-day free from his long-standing distress.

Case No. 4, illustrated by chart of same number, records a woman, 35 years old, who for years had been treated for ulcer with high acidity. She had been dieted to the point of emaciation, in efforts to relieve her subjective symptoms of burning from the tongue-tip to the epigastrium. Her stomach had sagged to the brim of the pelvis, its lower border being about two inches above the symphysis. A moderate colitis, with ptosis of the transverse colon and an intermittent constipation combined to complete a rather gloomy picture. After gravity replacement of the ptosed viscera, and support with a "Rose" belt, this patient improved steadily for two months, gaining 15 lbs. in weight during the first month and 10 lbs. during the second: but her discomfort was but partially relieved. At this time I made a fractional study of her secretion, preceded by a study of the fasting contents. The latter showed 30 c.c. of food-free fluid, containing a total acidity of 30, and free HCl acidity of 10. Reference to the

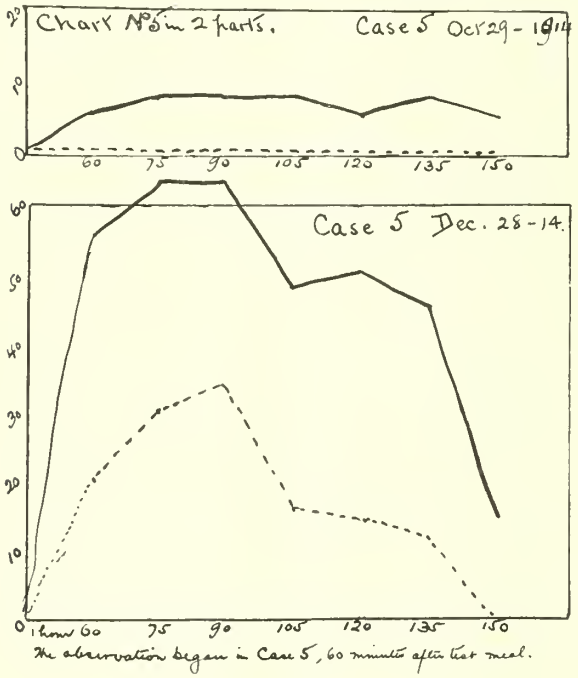
Chart No 5 in 2 parts. Case 5 Oct 29 - 1914
60 75 90 105 120 135 150
Case 5 Dec. 28-14.
60
50
40
30
20
10
0 1 hour 60 75 90 105 120 135 150
No observation began in Case 5, 60 minute after test meal.

CHART V

chart shows that while at the end of an hour following the test-meal the picture did not indicate a high acidity, it rapidly took on such a picture after one and a half hours. How high this curve would have gone I do not know; because at the end of one and three-quarter hours the observation was terminated at the request of the patient, who complained of fatigue. However, the type of curve was sufficiently indicated to enable me to anticipate the upward trend of the secretion and counteract it by appropriate measures. This patient is still under monthly observation, is taking no medicine and is feeling and acting perfectly normally.

Case No. 5 represents two phases of a different type of case, namely, a low secretion type. The case here illustrated is that of a professional man, aged 52 years, who had, through many years been developing an extreme grade of nervous exhaustion, of which his digestive condition is merely an expression. He complained of considerable distress at varying periods after eating, was obstinately constipated, was unable to concentrate on his work; and in fact gave evidence that all functions were performed at the behest of a very instable nervous system.

A fractional study of his secretion showed an achylia, with no HCl, free or combined, and only a trace of ferment activity. Evidence of a moderate colitis was present; but otherwise neither stools nor contents of the fasting stomach gave indication of structural change.

In this case, an analysis at the end of an hour would have pointed the condition; but the later handling of the case was facilitated by the more accurate knowledge furnished by the fractional method.

In connection with this case, I wish to emphasize two facts. First, that achylia is a very common condition, among the enervated people that we meet in large numbers here in Southern California; and second that a considerable percentage of these achylous stomachs resume their function under favoring conditions. This man's stomach chemistry at the end of two months, had come back practically to that of a normal individual. He had gained in weight, had a normal bowel function, and was able to enjoy his meals, both as to relish and freedom from discomfort. I wish that I could add that he no longer gave evidence of nervous exhaustion; but I consider him in line to eventually overcome even this tedious condition. His chart, No. 5, shows the two analyses, side by side, with dates attached, to allow of easy comparison.

The intricate study of both the motor and secretory functions of the stomach, as well as the more accurate measurement of its fasting contents, made possible by the introduction of this newer apparatus and technic, open up many unsolved problems and give promise of their early settlement. Among these may be mentioned the following:

1. Does each individual have a physiologic secretory curve peculiar to himself?

2. Does any given pathologic condition always adhere more or less closely to a certain type of curve?

3. Can changes in the course of disease be indicated by changes in the type of the curves produced?

4. Does the "Boas-Ewald" meal furnish everything desired in a secretory test-meal?

5. How do water and distilled water compare with the bread and water meal as stimulants of secretion?

6. What, if any, are the objections to adopting distilled water as the standard test-meal?

7. Does not the fact that water stimulates gastric secretion, indicate the use of water as a beverage at meal time rather than at periods when the stomach should be at rest?

Finally, may we not reasonably hope that the further refinements of the method of fractional study will bring out points of value in differentiating pathologic conditions, expressing themselves through the stomach?

ROUTINE EXAMINATION OF THE CEREBROSPINAL FLUID IN SUSPECTED SYPHILIS OF THE NERVOUS SYSTEM; RECENT MODIFICATIONS IN THE PREPARATION OF LANGE'S COLLOIDAL GOLD SOLUTION.*

By THOMAS G. INMAN, San Francisco.

Investigation of the cerebrospinal fluid as an aid in the diagnosis of diseases of the central nervous system has, during the past ten years, assumed a position of the greatest importance. In not a few diseases a correct interpretation of the physical or chemical changes in that fluid, or the detection of a bacterial intruder, will determine the nature of the disorder in question with a degree of certainty not afforded by any other means at our command. Thus lumbar puncture has become almost a routine practice in the neurological examination.

It is, however, to the diagnosis of those diseases of the central nervous system caused by syphilis that modern refinements in serological examination have brought the greatest aid supplementing the clinical and blood findings, or, when the former are doubtful and the latter negative, often furnishing the necessary evidence upon which a positive diagnosis can be made. The occasional failure of some or of all of these laboratory helps detracts but little from their great value. It is enough to remember that failures may occur.

The now universal employment of lumbar puncture in suspected syphilis of the central nervous system is sufficient evidence that the value of this procedure is well recognized but there is another service which may be rendered by this practice of equal if not of greater value than its use in suspected disease. I refer to the systematic examination of the cerebro-spinal fluid at the close of treatment in every case of lues to determine if possible the existence of a central nervous system infection which we now know may persist after the systemic symptoms have disappeared and the blood findings have become negative.

Should this examination show involvement of the nervous system, further anti-syphilitic treatment may secure complete abolition of the disease, prevent further advance to a paresis or tabes and at the same time destroy a focus which might later reinfect the general circulation.

This communication has for its object the presentation of a brief description of a satisfactory routine method of examining the cerebro-spinal fluid in these cases and to urge a more general acceptance of this or of any other good method, in an effort to determine in as far as it is possible to do so, the integrity of the central nervous system before dismissing, as cured, a patient who has been undergoing treatment for syphilis. In the words of Professor Wechselmann, "A lues therapy which neglects a concluding examination of the cerebro-spinal fluid must be looked upon as worthless."

The method here outlined is the one in use in Professor Wechselmann's division of the Virchow Krankenhaus, Berlin, and to his assistant, Dr. Hans Eicke, I am indebted for some of the accompanying details and for the opportunity of testing the gold solution on many spinal fluids.

The different procedures are:

1st. The Nonne-Apelt test with ammonium sulphate solution commonly known as phase 1.

2nd. The Roberts-Stolnikow-Brandberg quantitative test for whole albumen as modified by Pfaundler for the spinal fluid.

3rd. Estimation of the cell content quantitatively.

4th. Wassermann complement fixation test.

5th. Lange's colloidal gold reaction.

The cerebro-spinal fluid 6 to 8 c. c. is received in two test tubes—the first specimen, the one most likely to be contaminated with blood corpuscles, is used for the Wassermann, the second is reserved for the other tests. Blood corpuscles may be removed by centrifugalizing the fluid at once in an electric centrifuge for twenty minutes.

Nonne-Apelt: To .5 c. c. of the fluid in a clean polished test tube .5 c. c. of a saturated solution of neutral ammonium sulphate made with boiling water and filtered, is added. The tube is shaken, allowed to stand for at least three minutes and examined by holding it before a black background and allowing the light to penetrate obliquely from above. The different degrees are described as: 1, negative—no darkness, no opalescence; 2, trace of opalescence; 3, opalescent; 4, cloudy; 5, marked cloudiness.

One may first make the Ross-Jones ring test by gradually adding the fluid to the ammonium sulphate solution, a ring of hair-like fineness denoting an increase in globulin. After observing the ring, shake the mixture and have the Nonne-Apelt.

Roberts-Stolnikow-Brandberg-Pfaundler quantitative albumen test. Add to the Nonne mixture 4 c. c. distilled water, the precipitated globulin is dissolved, the solution contains spinal fluid in the proportion of 1:10 and is used in making further dilutions as follows:

To	1 c. c.	add	.5 c. c.	distilled	water	= 1:15
"	1 c. c.	"	1 c. c.	"	"	= 1:20
"	.5 c. c.	"	1 c. c.	"	"	= 1:30

and so on.

These are added (beginning with the weakest so as not to carry over a stronger solution to a weaker one) to an equal number of test tubes containing about 2 c. c. of pure nitric acid, the solution being allowed to flow slowly upon the acid from a fine pipette placed against the side of the test tube at a point just above the surface of the acid.

The tubes are now examined against a black background, as in the Nonne-Apelt test and a record made of the weakest solution showing an opalescent ring as 1:30, 1:40, etc., as the case may be. It is obvious that if the Nonne-Apelt shows a marked cloudiness it is not necessary to make quantitative tests on solutions below 1:30.

Normal fluid is said to show a ring in a dilution of 1:15 corresponding to .2 of albumen per mille. A noticeable ring with dilutions above this must be considered pathological.

* Read before the San Francisco County Medical Society, January 5, 1915.

The Colloidal gold test, suggested by the known action of solutions of proteid substances upon colloidal gold solutions was described in 1912 by Carl Lange of Berlin. He found that spinal fluid from patients suffering from syphilitic diseases of the central nervous system gave a characteristic reaction, denoted by a color change in certain dilutions. In fluids from cases of tuberculous meningitis or acute inflammatory affections of the meninges a color change in different dilutions occurred.

Numerous observers have substantiated his findings and with few exceptions have declared that we have in this reaction a valuable adjunct to other methods of serological examination now in use. The method, however, is yet in a transitional stage. The formula given here and the manner of preparation are somewhat different from that in general use, grape sugar being substituted for the formalin. The results seem to warrant the change as the new solution appears more specific in its action and is quite stable.

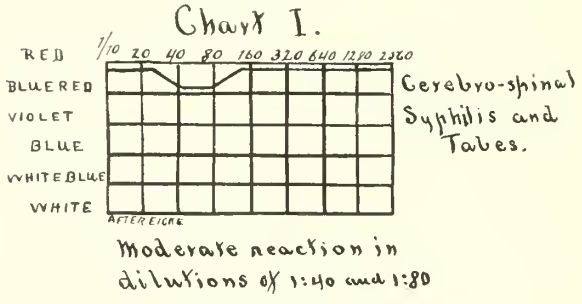

CHART I

The following description of this reaction is purposely abbreviated as there are many full discussions of the processes of preparation and application in recent literature. For the preparation of the colloidal gold solution proceed as follows:

Into a perfectly clean 1000 c.c. Florence flask put 500 c.c. fresh doubly distilled water, 5 c.c. of a 1% solution gold chloride and 2.5 c.c. of a 5% solution grape sugar (Mercks water free). Bring quickly to boiling and at once add 3 c.c. of a 3% solution potassium carbonate. Within a few seconds the solution becomes a bright, clear, red color, and is removed from the fire. If contaminated distilled water, impure chemicals or new or soiled glassware is used, the fluid is not transparent or shows a tinge of purple and must be rejected.

The solution should always be tested on a spinal fluid from a case of known paresis and on a blood serum mixture in the proportion of .1 c.c. normal blood serum to 5 c.c. normal spinal fluid.

The success of the preparation of the gold solution depends on the use of pure doubly distilled water, chemically pure chemicals and absolutely clean utensils, preferably of Jena glass.

In a test tube rack place 10 test tubes. In the one to the extreme left place 1.8 c.c. of a .4% sodium chloride solution and in each of the other tubes put 1 c.c. of the same solution; .2 c.c. of the spinal fluid is put in the first tube and with a clean pipette thoroughly mixed; 1 c.c. of the mixture is transferred to tube number two, mixed and 1 c.c. removed to tube number three, and so on throughout the series of ten tubes. The extra c.c. left over from the tenth tube is rejected. The tubes now contain spinal fluid in the proportions of 1:10, 1:20, 1:40, 1:80, 1:160, 1:320, 1:640, 1:1280, 1:2560, 1:5120.

Now to each of the tubes add 5 c.c. of the colloidal gold solution, shake the mixture and set aside for examination later.

No definite time can be set for the appearance of the reaction. With some solutions it begins at once, but in all cases the tubes should be set aside over night and reexamined the following morning.

A positive reaction is denoted by a color change beginning in luetic diseases in the tubes containing dilutions in the proportion of 1:40 and 1:80 as shown in chart one. The change in color is at first slight, beginning as a mild fading of the red color and proceeding through bluish red, violet, blue, white-blue, to white, that is, to complete precipitation as in chart two.

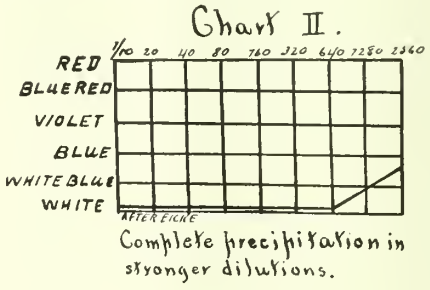

CHART II

The moderate reaction of chart one is that found in syphilis in the secondary stage with beginning changes in the central nervous system and some forms of cerebro-spinal syphilis and tabes. The complete change to white is the reaction seen in general paresis.

In tuberculous meningitis or in forms of meingitis associated with the presence of pus in the spinal fluid the reaction is seen in the weaker dilutions beginning at about 1:320 and extending to the right through three or four tubes; such a case is number three. Sometimes these reactions extend through all the weaker dilutions.

Cytology: As a means of keeping accurate records, the use of a counting chamber to quantitatively determine the cell content is undoubtedly desirable. A diluting fluid consisting of methyl violet .05, glacial acetic acid 0.5 and distilled water c.c. 25. facilitates the operation and at the same time gives some information as to the nature and age of the cells. Cells present in an amount over 10 per c.m.m. may be considered as an abnormal increase. As to the number of cells normally present there is much difference of opinion but as a diagnosis will rarely ever be determined by the cell count alone and since the number of cells present is not necessarily an index of the extent of disease present the number given above is sufficiently accurate for the purpose intended.

Where a counting chamber is not at hand the

French method may be used with satisfactory results. Centrifugalize equal parts of fluid in the usual tubes (2 to 4 c.c. in each tube) for 20 minutes at 2000 revolutions per minute. Drain the fluid off and siphon the deposits into two capillary tubes. Two cover glasses are prepared by drawing on each a small ring with a wax pencil in the center of which the drop in the capillary pipette is deposited. This gives two specimens, one from each centrifuge tube, aids in preventing error and assures somewhat against loss of the specimen during the staining process. The slides are now dried, stained by placing for one minute in May-Grünwald full strength followed by twenty seconds in Giemsa mixture 6 drops to 10 c.c. of distilled water, washed in distilled water and dried. Fifteen fields are counted using a 1/12 oil immersion lens and the average taken; 0.2 cells represents the normal; 3-5 border finding; 8-15 weak positive; 20 or more positive.

The Wassermann must be performed according to the method in use in the laboratory where the work is done.

Of the five tests mentioned a positive Wassermann is undoubtedly the most certain evidence of syphilitic disease of the central nervous system.

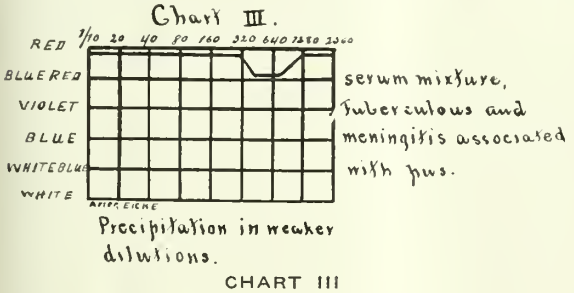

CHART III

But in the first and second stages a positive Wassermann is not often obtained even when cell and protein content are increased. It is here that the gold test will prove a valuable addition to the cytologic and protein determinations. In the spinal fluid of 136 luetics at the Virchow, Eicke found 60 giving a positive gold reaction, moderate lymphacytosis and protein increase though only 4 of the whole number showed a positive Wassermann in the spinal fluid.

It is not the intention to convey the idea that all cases in the first and second stages of syphilis showing changes in the spinal fluid are going to advance to more definite disease. Examination of the spinal fluid in the early stages of syphilis by different observers show that in over 50% there is some change as shown by increased lymphocyte and protein content. Undoubtedly many of these return to normal with or without treatment, but it may be stated as a general truth that if after proper anti-syphilitic treatment, the blood showing a negative Wassermann, the finding of an altered spinal fluid is evidence that the patient is not yet cured.

General paresis and tabes are among the most malignant results of syphilitic infection and are the most difficult to influence favorably by treatment. The very nature of these destructive processes does not allow us to hope from treatment for anything more than an arrest of the disease, some amelioration of symptoms and perhaps a return to normal of those cellular elements not yet wholly destroyed. The time to treat paresis and tabes successfully is as soon after the appearance of the primary syphilitic manifestation as treatment can be applied.

Every individual affected by syphilis in the primary or secondary stages should be looked upon as a potential paretic or tabetic and he has not received the full benefit of all that medicine has to offer him preventively or therapeutically until his case has been proved up by some such method as is here outlined and both blood and spinal fluid can be pronounced normal.

Discussion.

Dr. W. F. Schaller: I have always thought that cerebro-spinal fluid analysis to the neurologist was comparable to urine analysis in a medical case to the internist. The different tests that Dr. Inman has spoken of, with the exception of the Lange colloidal test, are tests we make generally. In speaking of the total albumen tests, I use the nitrate acid test that Sicard (?) described. Like all qualitative tests, it depends upon personal interpretation. There is a diaphanometric test of Mestrezat which I tried to use once, but gave it up. The standard solutions do not keep very well. I think we are in need of some good test for quantitative tests of albumen.

As to the cell count, Dr. Inman tells us that 10 cells is considered probably the upper limit of normal. I certainly agree with that, but I think it is rather high. I estimate six cells as highest for normal fluid. I found two cases in over 100 analyses in which there were six cells in otherwise normal fluid. French observers, in analyzing normal fluids, found that they seldom contain more than three cells to the c.m.m.

I should be pleased to have Dr. Inman tell us more about this Lange test. I know several Boston men, in writing a review of some work done there, considered it more important than increase in cells, and if that is true, it must certainly be important, because I believe you have an actual index of the amount of the meningeal inflammation from the cell count. In spinal cord tumors, we often get a static fluid with increase in albumen and globulin, but a very slight if any increase in cells. Dr. C. M. Cooper has reported a case of this kind. In reviewing cerebro-spinal fluids in cases of tumor, it has appeared to me that I have found the same condition in a number of cases—albumen considerably increased and a very slight increase in cells. In the absence of any signs of syphilis—either clinical or in the Wassermann—I think this is of considerable importance; it has its explanation in the fact that when tumors cause intracranial pressure, we have some stasis and interference with the natural flow of the cerebro-spinal fluid, and get a fluid with an appreciable increase of albumen.

The point Dr. Inman made that in many cases of syphilis it is impossible to tell whether the nervous system has been spared or not without examining the spinal fluid after treatment has been discontinued, is a very timely point. I think this will become a routine test. We know that even in the secondary stage of syphilis we often find an increase of cells in the cerebro-spinal fluid; pain in the back of syphilitics may be from radiculitis due to an extension of the lepto-meningitis of the cord.

Doctor G. Franklin Shiels: I am perfectly convinced of its diagnostic value, but I must register a protest—not against these methods, chemical or microscopical—but against the principle set forth

that lumbar puncture be used as a routine in all cases of syphilis, and in all diseases of the nervous system. Syphilis is so widely spread that one might almost say that the human race is syphilized as well as civilized, and the nervous manifestations of the disease are infinitely few when compared with the number of persons who have, or who have had lues; moreover, the disease is becoming milder and milder as years roll on, and at the same time more curable.

Now since ataxia and paresis are practically recognized as always being of syphilitic origin (the exception, if there be any, proving the rule), and since lumbar puncture must be considered as a major surgical procedure on account of the skill and care with which this operation should be carried out, I protest against it being used except when absolutely necessary, i. e., when the Wassermann blood examination or one of its modifications does not satisfy, and a differential diagnosis is imperative. When used in cases of ataxia or paresis its employment is absolutely indefensible since the disease itself is an absolute diagnosis of the existence of its acknowledged cause. You can see how lightly this procedure is regarded by the remarks of Dr. Schaller, who tells you that he, with most neurologists, considers it just as necessary to examine the cerebro-spinal fluid in the presence of nervous disease, as it is to examine the urine in disease of the kidney. This is terrible. It is always possible that by introducing a needle into the spinal canal a serious injury may be done; suppose, for example, that the danger of such injury were 1/10 of one per cent., and the mortality were 1/100 of one per cent., would you be justified in using this procedure as a part of your routine in diagnosing a case of paresis, or ataxia, when you already knew the nature of the disease and its cause? I think not.

I must not be misunderstood in this matter. I both feel and know that everything which is done in the laboratory which will aid in the most distant way the progress of medical science, or benefit the patient or the people at large (which after all is the sole reason for the existence of our profession), must be valued, and used to the extent of its value.

My contention is that, when you invade any portion of the anatomy, which is vital to the patient, and injure it to the slightest degree, you are putting that patient in jeopardy. I believe that spinal puncture is to be regarded as a serious procedure in which an accident might arise which would be most disastrous to the patient, infection, injury to nerves, etc. While not to be in any way regarded as a similar procedure, except that a needle is introduced into the spinal canal, one instinctively thinks of spinal anesthesia which for a time was lightly regarded, and as lightly used, and vaunted as a harmless substitute for ether, and other anesthetics until experience told all thoughtful surgeons that it had a most serious danger, and should be discarded except in the few rare cases where it might be less dangerous than other means available.

As I have said, lumbar puncture is of aid in making a differential diagnosis in a certain small class of cases where the other diagnostic means available do not suffice, and I again protest against its being used as a routine practice, or to it being referred to as on a par with the examination of the urine either in regard to its necessity, its value, or its freedom from danger.

C. G. Snow: As regards the danger of securing the fluid, I do not agree with Dr. Shiels. I have experienced very little difficulty, and personally I do not regard it as dangerous. As regards its utility, it is not only of value as a positive reaction, but its value is increased as a negative reaction. I can add nothing to Dr. Inman's paper, which was very complete and comprehensive. As regards every case of syphilis being frankly syphilis, I cannot agree with that. I do not believe it is possible to know in every individual case. A patient may have all symptoms of syphilis, may be going through treatment, and may be developing multiple sclerosis. With a spinal puncture you can definitely tell if his nervous symptoms are due to syphilis. As regards the application of the test, it is really easy and I have never seen any false reactions. My personal idea is that it is a more valuable test than the Wassermann when you are determining whether to continue or stop your treatment. When your case is undergoing treatment, it is very interesting to analyze your fluid and watch it go down step by step. As regards the Lange test in association with the other tests, I think that in all spinal fluid examinations you should beware of negative reactions. It has already been noted that in cell counts with tumor of the cord, negative findings are not to be taken as indicating the absence of meningeal irritation. A negative reaction in all spinal fluid examinations except the Lange I am skeptical about. You may have a negative Wassermann—in fact, it is not uncommon to have a negative Wassermann in paresis or tabes in late stages, whereas you would not have a negative Lange. Therefore, I consider it one of the finest tests that have been devised in recent years.

Dr. W. P. Lucas: I have nothing to say except to disagree with Dr. Shiels as to the danger from lumbar puncture. It is done at the Psychopathic Hospital in Boston, where they have 100 to 150 a month, and every case has lumbar puncture except brain tumor cases, and the last report shows no accidents from lumbar puncture. I think, as Dr. Schaller says, that it is absolutely comparable with the urine examination in cases of kidney disease, and is a test that should be carried out on every neurological case.

Dr. G. L. Boalt: May I speak of a case that was sent to me about three years ago for the Wassermann test? The patient was a man twenty-three years of age. The result of the serum examination was a triple plus Wassermann. His physician gave him very thorough treatment with a number of salvarsan and neosalvarsan injections and mercurial treatments in the intervals. After a year and a half he was again sent to me and the blood gave a negative Wassermann reaction, and with frequent examinations during the past eighteen months we have continued to get negative results. A week ago his physician, before dismissing the case, sent the spinal fluid for examination, which gave a triple plus Wassermann. I sent the fluid to Dr. Cummins of the Harriman Research Laboratory at the Southern Pacific Hospital for the Lange's colloidal gold test, who reported that the results suggested an early case of paresis.

I think every syphilitic case treated should have a spinal fluid examination after the disappearance of the secondary symptoms, and another before being dismissed as cured. Even the possibility of injury to the one person is better than the sorrow of a whole family when that member has been sent from his home to a state hospital too late, and practically incurable.

Dr. Inman, closing discussion: One cannot compare, in as far as the danger attending the procedure is concerned, ordinary spinal puncture for diagnostic purposes with the injection of cocaine or other drugs into the spinal canal. I have seen many spinal punctures without, aside from occasional headache, noting any untoward result.

I agree with Dr. Shiels that it is a major surgical operation in that it must be performed with the same surgical aseptic or antiseptic care which should be preliminary to all operations, major or minor. We prepare as in operating in the abdomen, brain or elsewhere in the body. The puncture field is painted with tincture of iodine, the needle sterilized by boiling and the hands of the operator properly cleansed.

I am not a laboratory worker, but I have brought

these few simple tests together for the use of men who like myself are employed in clinical work. For the trained laboratory man one method may be as good as another and he selects those which best serve his needs. The Nonne, albumen estimation and cell count are probably sufficient to show in most cases whether or not there is any inflammatory change in the central nervous system and for the purposes outlined in this paper that is what is desired.

With regard to the statement of Dr. Schaller that 10 cells per c.m.m. is rather high I would say that this number was taken arbitrarily. I agree with him that for accurate estimation 6-8 would come nearer being the number normally present. I do not think so much reliance should be placed upon the number of cells because with old and young cells present the number is not a definite indication of the extent of the process producing them.

The acetic acid staining mixture aids in differentiating young from old cells but for accurate cytologic work some such method as that of Alzheimer is necessary and this takes too much time for practical purposes.

A sensitive gold solution will show finer syphilitic changes than the Wassermann. The change in the formula is due to an effort to make the reaction more specific, that is, to cause the color change to cling more closely to certain dilutions. This has been shown to be possible to some extent at least in that with this formula the reaction in syphilitic diseases occurs first in dilutions of 1:40 and 1:80.

It was not intended to recommend the indiscriminate performance of lumbar puncture in all cases of known syphilis, but rather, first—to urge its performance at the close of treatment of cases of general syphilis in order to determine that the central nervous system is healthy before dismissing the case as cured, and, second—to outline a systematic method of cerebro-spinal fluid examination which could be easily and safely followed.

AUTONOMIC REFLEXES FROM THE DIGESTIVE TRACT.*

By HARRY B. REYNOLDS, M.D., Palo Alto.

The progress made in diagnosis of diseases of the digestive tract in the last decade is little short of phenomenal. In the past our only avenues of approach were through the subjective history, a physical examination and laboratory studies. The work of Paulow and others working along lines of experimental physiology has formed anew our conceptions of the process of digestion. The studies of Cannon, Hertz, Meltzer and others have accumulated a mass of data on the motility of the digestive canal no less startling than the late discoveries on the heart beat. The Roentgen rays, experimentally and clinically applied, have amassed facts which bring us closer to absolute precision in our diagnosis.

Still another approach lies in a study of visceral neurology. Investigators along special lines have worked out the anatomy of the so-called autonomic system, but its physiology is less clear, being obscured by the intricacies of hormone action, internal secretion, psychic influence and the contradictory evidences of experimentation. It is clear, however, that the various secretory and motor activities of the digestive tube with its accessory glands, while largely local in their origin, are under the general supervision of a nervous mechanism consisting of two factors, the one inhibitory, the other stimulating in its influence.

The activity of this nervous mechanism, however, is not limited to the digestive function. Both the sympathetic and the autonomic systems are concerned with the control of other glands and functions. This circumstance becomes of importance in diagnosis in that the nature of an abnormality in the function of a digestive organ can often be surmised from a concurrent variation in the physiology of the heart, blood vessels, pupils, respiration, etc. Thus the study of these reflexes becomes useful to us both in determining the nature of an abnormality in the digestive tract, and, conversely, in recognizing from a digestive symptom an extra-digestive organic cause.

Another matter well worth study is the very real effect of psychic influence on the functioning of the digestion. To one who only half appreciates this fact the recounting of the experiments of Paulow is very enlightening. We all recognize such outstanding truths as the gastric stasis under emotional strain, the vomiting of a meal during grief, anger or other powerful emotion, but few clinicians give due weight to the influence of prolonged grief, worry, fear, mental depression, discouragement, domestic unhappiness in the causation of constipation, spastic colitis, gastric atony, colonic stasis, and even enteroptosis. Yet a recognition of this very frequent relation will often lead to a cure or the avoidance of a useless nephropexy or colon short-circuiting. When one is confronted by a patient complaining of a digestive disturbance, a little reflection will readily disclose that not all of the symptoms complained of can be directly referred to the lesion discovered but that part of the picture is due to abnormal functioning of distant organs reflexly influenced, while still other complaints may be referred to the psychic state of the individual resulting from subconscious effects of the first two groups of symptoms. Let me illustrate:

Case I. A middle-aged lady, formerly treated for several years for neurasthenia, came complaining of indigestion, vomiting, hunger-pain, tremendous constipation with spastic colitis, frequent bleeding from the bowel, loss of flesh and prostration. An operation for ulcer of the pylorus vastly improved her for two years. Her husband then developed progressing heart disease, during the course of which she devotedly nursed him and during which time she remained perfectly well. Three weeks after his death, unoccupied and depressed, her constipation returned and the mucous colitis again developed in an exaggerated degree. It then became necessary for her to earn her living and, as a means to this end, she took up practical nursing. During her first case, again occupied and forgetful of her misfortunes, she again vastly improved and she has been busy and in excellent health to the present time.

In this case is clearly displayed the relation in the symptom picture of the basic organic lesion, the reflex irritative symptoms and the psychic factor each with its influence in the sum total of symptoms. Moreover, the effect is demonstrated of surgically relieving the proximate cause and of psychically, by occupation and forced interest in the affairs of others, relieving those symptoms built up on the neurosis.

* Read before the San Francisco County Medical Society, April 6th, 1915.

It is well, therefore, particularly in the diseases of the digestive system, that the diagnostician keep well in mind this analytic scheme of the symptom picture, viz:

1. The symptoms definitely referrable to the local lesion;

2. The symptoms due to reflexes through or irradiation into other branches of the spinal and vegetative nervous system;

3. The symptoms due to the psychic state arising from the first two.

On the other hand I would warn against carrying this scheme to absurd lengths and attempting to push the refinements of diagnosis beyond reasonable limits. Thus one is tempted to regard with scepticism the claims of A. Thies [1] who states that "with appendiceal diarrhea there is no difference in the pupils unless the appendix is turned up on the cecum" and that the "pupils are found constantly more symmetrical in adhesions of the hepatic flexure though this was not so with other parts of the colon."

The reflexes along the spinal nerves described by Head and Mackenzie and due to an irritability of cord segments from excitation of visceral nerves are familiar to all. When these reflex sensitive areas are present they are of considerable service in diagnosis and fairly dependable but they are by no means constantly present and are therefore only of service when found. Moreover, the hyperesthesias of Head and Mackenzie often confuse the direct sensitive points of local abdominal disease. In these cases careful study is necessary. Thus in a case of gastric ulcer I was able to find several definitely tender points in the upper abdomen, these points varying from day to day. After rest, starvation and poulticing, the hyperesthesias disappeared leaving only the one constant and consistently tender point to the right of the navel of diagnostic significance.

The reflex irritations of the sympathetic and vagus nerves due to disturbances along the digestive tube are still less understood. They are not consistent and dependable and no rules can be laid down associating given reflexes with given and constant diseased conditions, but when these reflexes do occur it should be recognized that they may be indicative of possible remote conditions which should therefore be carefully sought.

Cooper [2] has shown clinically the association between extrasystole in the heart and disease of the gall bladder and dilated stomach. Hence when one finds extrasystole one should bear in mind these possibilities of reflex irritation along the digestive tube. Moreover, a rhythm disturbance may be associated with digestive errors, both conditions being due to an irritative cause at a distance.

Case II. A widow, 38 years of age, presented symptoms of gastric indigestion with gas and distress following food and associated with a bradycardia of such considerable seriousness as frequently to cause fainting following a hot bath. The pulse usually ran 48 to 50. Incidentally menorrhagia was an old complaint. Investigation of the latter disclosed a pelvic mass the size of an orange which on operation proved to be an old ectopic pregnancy. Removal of the mass resulted in relief from the gastric symptoms and a return of the heart to the normal rhythm.

Albutt [3] tells us that in an irritable heart with an upset rhythm "the vomit of a little sour mucus or the discharge of an offensive stool will often set matters right."

Godlewski [4] has taken therapeutic advantage of this reflex when he recommends in attacks of paroxysmal tachycardia the swallowing of a large bolus of some rough, coarse food, thus upsetting the reflex arc by stimulating the vagus through the gullet. He cites two cases in soldiers in whom the attacks were readily aborted by swallowing a large piece of bread crust.

Osler tells of a physician who had through forty years suffered from a tachycardia the attacks of which he could regularly control by the drinking of ice water.

It is not a rare occurrence to find an active salivation resulting as a reflex from an abdominal complaint. A patient suffering from recurrent gall stone colics tells me that he is warned of an impending attack by a nausea and profuse salivary flow.

On the part of the lungs there are certain abnormalities reflexly referrable to disorders of the digestive tube. Thus an obstinate asthma may be the manifestation of vagus hypertonie induced by constipation. These cases are not to be confused with those toxic cases due to the circulation in the blood of certain of the amine bodies, notably histidin, resulting from erratic protein digestion or failure of detoxication on the part of the liver. As a result of a seemingly true reflex asthma may be cited the following case:

Case III. Wm. M., 30 yrs. of age, had suffered from bronchial asthma for several years. He had moved to Palo Alto hoping for a benefit from the climatic change but his asthma continued. Nose and throat treatment had failed to benefit him. On bending our efforts to the relief of a severe constipation the asthma was immediately and vastly improved though an occasional mild attack accompanied nasal or bronchial colds.

The case illustrates Hemmeter's statement that where a reflex vagus hyperactivity occurs it is likely to affect an organ already the seat of irritation.

The following case illustrates the occurrence of chronic asthma and bronchitis apparently caused and maintained reflexly by gall bladder inflammation:

Case IV. E. M., aged 16, had for several years an obstinate asthmatic condition with cough which was sometimes much worse than others, but never entirely disappeared. At times it incapacitated her from her school work while usually she was able to be about and accomplish the usual enterprises of girlhood. She had been examined by several specialists for tuberculosis but the bacillus had never been found.

I was called to see her by her attendant for a recently formed inflammatory mass under the right rectus causing chills, fever, prostration and pain.

Recognizing a circumscribed abscess which I took to be of probable gall bladder origin, I advised operation.

I found a large abscess communicating by a tortuous sinus with an infected gallbladder. While this drainage wound was healing it was noted that her cough was improved. Following the secondary

operation at which the gall bladder was removed and dense old adhesions to the stomach and colon were released the asthma gradually ceased and the bronchial catarrh was readily cured. The patient is now, after four years, in robust health and free from asthma.

Robert T. Morris mentions a cure of bronchial asthma of four years' standing by short-circuiting the bowel for colonic stasis.

Reflexes along the phrenics are not unusual. Pottenger[5] has mentioned the retraction of the diaphragm in the presence of apical lung lesions.

More definite are the distressing and often serious attacks of hiccoughing due to abdominal irritations. This phenomenon is interesting from the standpoint of the curious and bizarre remedies that may bring relief. A sudden intentional fright is sometimes effectual. Curious weird maneuvers such as raising a glass of water above the head between each two acts of swallowing may be surprisingly effectual as in a very serious case seen a year ago, where this seemingly senseless method was effective for a half hour at a time. Several years ago I saw an old gentleman who had hiccoughed for several days until his fatigue was pitiful. "Cliristian science" suggestion treatment was said to have relieved him for several hours at a time, but permanent relief was found only on washing out the stomach through a tube.

The physician of Aristophanes advised for his illustrious patient the holding of the breath, the gargling of water, or in the last resort, the tickling of the nose with a feather to induce sneezing.

All these curious popular methods of relieving hiccoughing are effectual through interrupting the reflex arc either psychically or physiologically.

Case V. One year ago, I operated upon a gentleman of 48 years considerably prostrated by the presence of a massive perisigmoid abscess. Following the operation he began to hiccough and continued for eleven days during which time he was unable to take food. All methods, conventional and otherwise, were employed but only with temporary effect. Stomach lavage was of little value. The curious method mentioned above of taking a quantity of water and swallowing it while looking at the glass above his head, at first tried as a concession to the superstition of his wife, but later as the only means of gaining a few minutes' rest, proved more efficient than any medical suggestion. Relief was finally gained by washing the splenic flexure of the colon. Recovery followed.

I believe that hiccough as a post-operative condition or as a complication of prostrating disease is more frequently of colonic origin than from stomach. J. A. Grober[6] has indicated its frequent occurrence in disease of the colon, especially in ulcerative colitis. Colonic lavage or a high asafoetida enema will frequently avail where stomach washing does not bring relief.

Case VI. Mr. B., 50 years old, had formerly been a very heavy man of 350 lbs. He came to me, having lost 125 lbs. as a result of prolonged severe indigestion. For several years he had suffered from indigestion with distress after meals, gas, sour stomach and frequent attacks of prostrating headaches relieved by vomiting large quantities from a distended atonic stomach. X-ray confirmed the diagnosis of ulcer and located its site on the lesser curvature near the cardia.

For three years he had been exceedingly annoyed by a marked difficulty in deglutition. Unless he exercised great care in swallowing the food would enter the larynx and trachea with resulting choking. He had learned to bend his head and upper body far over to the side to avoid this inconvenience. A specialist had told him the vocal cords were paralyzed. Examination by Dr. Houston showed the larynx, palate and pharynx apparently normal. This difficulty very largely disappeared as the stomach condition improved. The only ready explanation of the facts is found in the assumption of a vagus irritation at the site of the gastric ulcer reflected outward along the laryngeal and pharyngeal nerves.

A familiar illustration of the reflex association of the larynx with the intestinal tract is the spasmodic strident inspiratory phonation on dilatation of the anal sphincter.

Case VII. Mr. T. F., a man of 40, had had for several years an esophageal pouch which had precluded the eating of solid food and had been the source of extreme annoyance. After operating for a chronic appendicitis, with no thought of any association with his esophageal pouch, I was surprised and highly pleased to find a steady improvement in his facility in swallowing so that he could again eat meats and vegetables with considerable comfort.

His diseased appendix had reflexly caused a cardio-spasm which had in turn produced a saccular pouch of the gullet. With the removal of the appendix the cardio-spasm was relieved and swallowing was thereby much improved though the pouch, of course, remained as a permanent condition.

Localized spasm of the stomach wall is more frequently a result of reflex irritation than of local gastric disease.

Thus Case[7] has found hour-glass stomach in sixteen cases of duodenal ulcer though never in ulcer of the stomach. It is also found in gall stone disease and with appendicitis.

The inflamed appendix is the cause through these reflex paths of many secondary conditions. Cardiospasm, pylorospasm, delayed duodenal emptying are frequently seen on the screen. Constipation or diarrhea of appendiceal origin are probably due to irritative hyperactivity of the cranio-spinal or sympathetic control. It is well to bear in mind that diarrhea in particular may be of appendix origin and that it may be out of all proportion to the degree of appendix disease.

Case VIII. represents such a condition. A married woman of twenty-two, Mrs. D., had had several sharp appendix attacks with some residual soreness in the intervals. For eighteen months there had developed a gradually increasing diarrhea until when she came to me she was having eight to ten soupy movements daily even on a constipating diet. Weakness and loss of nutrition had become moderately severe and she was steadily losing ground. A long thickened appendix was removed with immediate improvement of the bowel condition. The patient was very skeptical of the diagnosis and a moderate diarrhea continued for several weeks due, in my opinion, to the psychic state of apprehension. Only after two or three months did the bowels regain their normal activity with unselected diet.

That apprehension and fear are capable of causing this overactivity is well known to us all and was illustrated to me within the month in the case of a woman coming to me for a lump in the breast. I diagnosed a possible cancer and advised operation the following day. During the next twenty-four hours she had no less than ten passages with no other discoverable cause.

The condition of spastic colitis is of considerable interest and is as yet of uncertain mechanism. Up to the past few years the condition was looked upon by the large majority of practitioners as a true colitis and treated as such. At present three conceptions are current. The one looks upon the mucous colitis as the primary condition which reflexly brings about hyperacidity, ulcer, colonic stasis and, through the constipation, appendicitis. A second and more logical conception is that which understands the ulcer, hyperacidity, gall stones or other irritative lesion to be primary in the sequence. A third conception, and one which I believe is not sufficiently appreciated at least as a factor, is the explanation of the spastic colitis as a condition arising from psychic causes. Certain it is, whether we look upon it as the cause or as an incidental factor, that spastic colitis occurs in practically all the cases in neurasthenic, psychically irritable persons who are of the worrying, depressed, apprehensive, melancholic, introspective temperament.

In my experience the spastic colon has always been associated with some irritative lesion which had seemed to be the primary link in the chain and to cause a spasticity of greater or less degree varying with the psychic condition of the patient. The case cited in the early part of this paper (Case One), illustrates the paramount influence of the psychic condition and its control by a dominant interest outside oneself and the beneficial effect of absorbing occupation.

As a final illustration of reflex conditions, I wish to mention the constipation associated with an irritative lesion about the anus, painful hemorrhoids or fissure in ano. Even a tightly contracted anal sphincter may be the seat of an intractible constipation readily relieved by forcible dilatation.

Case IX.' I recall an interesting case of long standing neuralgia due to severe anemia which had baffled many physicians in the course of the patient's extensive travels. The anemia was often of severe type, the hemaglobin reaching 35% at the time I saw her. In the pursuit of the ultimate cause I found a very obstinate constipation without evident reason other than a small but very painful hemorrhoid of long standing. The simple removal of this condition relieved the constipation. Normal bowel movements cleared away the toxemia. This in turn allowed the blood to regenerate after which the neuralgia ceased to trouble—truly a medical version of the "house that Jack built."

The above recounting of some of my own experiences is but a small incursion on a field so broad that volumes might be written on it. But it will serve as a suggestion that, where conditions are obscured and the search for cause is baffling, the recognition of the numerous and unexpected and remote lesions will enable us often to run down the ultimate cause, and ultimate cause lies at the foundation of rational therapy.

In explaining these reflexes I am not one of those enthusiasts who feel that the autonomic system is an open book. At present its physiology is vague, its pathways are confusing, and its interassociation with internal secretion, hormones and local innervation is intricate. Indeed one often finds an apparent intermingling of vagus and sympathetic influences and of stimulating and inhibitory effect. Thus while removing stitches from an abdominal wound I noted a marked stimulation of peristalsis, which we are told is a vagus irritative effect, yet the heart instead of being slowed thereby was running more than one hundred beats to the minute.

So let me join my voice with the conservatives who caution us not to look too expectantly for consistent effects from given causes, but, per contra, where effects are found explainable by autonomic reflexes a careful search backward over the numerous trails will often lead the eager pursuit directly to the door of the causative lesion.

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THE RING TO RING INCISION FOR HERNIORRHAPHY.

By HARRY M. SHERMAN, M. D., San Francisco.

Training in the operating-room as assistant so familiarizes the young surgeon of to-day to the making and closing of incisions that the whole subject is dropped from the text books on operative surgery. Still, beginning and finishing an operation are both important phases of it, and placing an incision so as to have it convenient, adequate, as harmless as possible and likely to heal easily with but little deforming scar, is not an unimportant matter. Kocher's teachings regarding the relations incisions should have to the cleavage planes of the skin, segmented incisions, and finally his scheme of normal incisions are, of course, still fresh; and there has been but little added to what he said, but rather a constant regard for and application of his dictum about the sparing of nerves in the planning of incisions, recognizing the nerve as the most highly differentiated tissue in the part, the one with the closest relation to the tissues in its distribution region, and the one that will be surely the slowest to repair if it repair at all.

Those of us who have had to get into and out of joints have all appreciated Kocher's scheme of incisions if we have been wise enough to use them —all who have had to work in the neck have found his oblique and collar incisions fulfil, in the first place all requirements of exposure, and in the last place all needs of healing. Lower down, on the trunk, his segmental incisions for the excision of ribs, for the removal of the appendix, for reaching iliac abscesses and the iliac arteries, for colostomy and sigmoidostomy, lead naturally to a transverse skin incision above the symphisis pubis as the skin opening for a suprapubic cystotomy. This is practically the identical incision Küstner suggested, for cosmetic purposes, at the Second International Congress for Gynecology and Obstetrics, in Geneva, Switzerland, in 1896, and that Rapin, at the same time and place, offered as the "incision ésthetique"

—and it is on the basis of this skin incision that Pfannenstiel in 1900, Hartmann of Paris, through the publication of a thesis by a student named Naudet in the same year, and Stimson in 1902, all independently planned the identical technic for entering the abdomen. All these incisions follow the curving lines of blood vessels, nerves and skin cleavage planes, and in this situation are placed in the region of pudendal hair by which they are in great part covered a few weeks after the operation.

In December, 1907, I began to use this Küstner incision for hernia operations, applying it first to double hernias and immediately afterward to single hernias. In making it the separated finger and thumb of one hand span the space between one external abdominal ring and the other, and the knife is drawn across the spanned space, so that the cut is naturally named the Ring to Ring Incision. It passes from the external pillar of one ring with a gentle downward sweep in the middle to the external pillar of the other ring. Beneath the skin the fatty panniculus must be cut to the deep fascia or sheaths of the recti. For an operation on the canal of either side the skin and incision are drawn toward that side, and the natural slip of the skin and fatty panniculus is usually so great that the field of the operation in the inguinal canal and on the rings is fully exposed. If necessary, however, the incision may be extended in the original direction, transversely, and this is especially important if a sufficient field is not easily exposed by the sliding of the skin, for too great a traction force is contusing to the tissues and invites infection or might even induce a slough.

I first used this incision for double hernias, drawing the skin and panniculus to the right to expose the region of the right ring and to the left to expose the region of the left ring. Soon, however, I applied it to single hernias, and, after the repair of the ring on the side of the hernia, I uncovered the ring on the sound side by drawing the incision that way. This permitted inspection of the anatomical arrangement of the aponeurosis. Now, if there was found an aponeurotic arrangement similar to that of the side of the hernia I considered the condition a potential hernia, on the general ground that a possessor of a hernia on one side is predisposed to another on the remaining side, and that this is especially so if the aponeurotic structures of the inguinal canal and rings are similar to those on the side where a hernia has already existed. Under these circumstances I repair the second canal as I have the first, without having to consider any sac, and rate the procedure as prophylactic. Again, if I find a generally relaxed ring, as in an elderly person, into which I can easily slip my finger, I repair it on the same basis. This is because I am in accord with the ideas of Alexander Hugh Ferguson on the relation of large internal rings and insuncient aponeurotic support of the intestines to the production of hernia, and do not consider that the unclosed tube of peritoneum has the monopoly of the field of hernia predisposition. There is this practical argument in favor of the Ferguson view, though it is acknowledgedly a small one. Eighteen years ago I operated upon a little boy for an ordinary congenital hernia with an undescended testicle, by the Bassini technic. Within a year the hernia had reappeared as a bubonocele, external to the outer pillar of the external ring; his parents brought him to me again and—*mirabile dictu*—asked to have the operation repeated. This I did, and in the doing made a very careful dissection of the part. This developed the fact that the attachment I had made of the conjoined tendon to Poupart's ligament had held; the new protrusion was external to my outermost stitch and indicated that I had not carried the attachment of conjoined tendon and the borders of the transversalis and the internal oblique far enough out on the ligament, but had left a space below the curving muscle fibers above and the ligament below, a space that was covered only by the aponeurosis of the external oblique, and the new hernia was pushing its way through here. A more complete attachment of the muscles to the ligament met the indications and for many years there was no recurrence, but I have not heard of the boy for some six or eight years.

In the *Old Dominion Journal of Medicine and Surgery* for April, 1913, E. S. Judd, Surgeon to the Mayo Clinic, published an account of an incision identical with that I have here described. Judd has employed the method, he has written me, for three or four years, but has applied it only to double hernias as I did when I first began. In the paper referred to he calls attention to the adequacy of exposure of the rings and canals, to the relatively slight amount of hemorrhage and to the fact that this incision escapes the compressed and hardened skin of truss wearers. His article has some most excellent illustrations.

I have used this incision for all hernia operations which I have done since 1907, but of course, even with my longer time, I speak from a much smaller experience of it than does Judd.

I find that in 1906 Zacharias applied the Pfannenstiel principle to operations for umbilical and ventral hernias, but he does not mention inguinal hernias, and the work that he did was possible as much according to C. H. Mayo as according to Pfannenstiel.

This same incision is ideal, also, for operations to shorten the round ligaments of the uterus in the inguinal canal. The extra-abdominal type of operation has been quite uniformly replaced by that within the abdomen, because of the difficulty often encountered in finding the round ligament in the canal and the lack of permanence of the results of the Alexander operation. The former is a valid objection, the latter is not if the ligament be found and properly attached to and under the periosteum of the pubis. I have done it in this way. After finding the ligament—there is a nerve in the inguinal canal, the ilioinguinal nerve, which can sometimes pass at first glance for the small fibrous end of an attenuated round ligament—it is drawn out of the abdomen, its peritoneal sheath being pushed back as the muscular portion comes into the field. I then make two small parallel incisions 1.5 cm. long and 0.5 cm. apart, transversely, in the periosteum of the pubis near the spine. The spine

is the normal insertion of the ligament and I cut the ligament short off there, draw its end under the little strip of periosteum until the uterus is properly supported, and then fold it back and suture it to itself with fine silk. This method has been followed in a few cases only, because only a few of these cases come to me, but I have been able to keep in touch with some of them and to ascertain the position of the uterus after a number of years, and in each instance the shortening had held and the uterus was in the place I put it.

Now, if it is impossible to find either or both of the round ligaments in the canal, it is no trick to open the abdomen by the method which Pfannenstiel, Hartmann and Stimson separately and independently devised, and then treat the structures within the abdomen as the conditions warrant, and this extension of the work to the intra abdominal field necessitates not only no new incision, but not even an increase in the length of the incision made.

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PERTUSSIS.

A RÉSUMÉ OF OUR PRESENT KNOWLEDGE.

By W. W. BEHLOW, M. D., San Francisco

Pertussis is an epidemic disease. It is more frequent and severe in cold climates but is otherwise not influenced by season and weather. Epidemics vary greatly in virulence, intensity, and mortality.

In the ordinary sense, pertussis is not air-borne, although it may be transmitted by droplet infection. It may spread by indirect contact or by third persons, but the usual method is from person to person as in diphtheria. Domestic animals are subject to the disease and are undoubtedly responsible for some of its transmission. Although not contagious during the period of incubation, it is transmitted at all other periods of the disease even after convalescence. It is most contagious during the period following the appearance of the early symptoms.

The causal agent of the disease is the bacillus pertussis of Bordet and Gengou. It occurs in large numbers between the cilia of the epithelial cells of the trachea and bronchi and possibly the nose. Mallory and Hornor[1] have satisfied the laws of Koch for the complete demonstration that the Bordet-Gengou bacillus is the cause of pertussis. The action of the bacillus appears to be largely mechanical, thus preventing the removal of secretion and creating a constant irritation which results in coughing and the characteristic spasm called a "whoop."

All persons are susceptible to the disease. The greatest susceptibility is between six months and five years. Second attacks are very rare. How long is whooping cough contagious? That is a difficult problem to solve. It is a safe plan not to release a patient from quarantine until the spasmodic cough has disappeared. As this disease is very dangerous, the public should be taught that it is contagious both before and after the "whoop." In England and Wales in 1891 the death rate of pertussis was greater than that of measles, diphtheria, scarlet, or typhoid. In young children and infants, this disease causes more deaths than measles: 95% of deaths occur during the first five years of life.[2] The cause of death is usually due to some complication. The use of vaccine as a preventive measure has been only partly successful. Hess[3] in a study of 85 cases, concludes that vaccine has a protective value in a certain percentage of cases and recommends that it be employed in institutions and families to prevent the spread of the infection.

The incubation period is indefinite but is probably one to two weeks. The symptoms are usually divided into three stages: catarrhal lasting about ten days; the spasmodic, of a month or six weeks duration; the decline, which may last from three weeks to several months. The first stage is similar to an ordinary tracheitis but instead of clearing it becomes worse and gradually the paroxysmal character of the cough is evident. The typical paroxysm is too common to describe in this article. The final stage is simply one of lessening number of paroxysms. The patient's appetitite returns and he appears to be much better. A long continued cough should make one suspicious of a lung complication, as tuberculosis. The blood picture shows a definite leukocytosis of the lymphocyte type.[4] This is characteristic. The complement-deviation test is of value in the doubtful cases.

Fresh air; nourishing diet; careful attention to the bowels; these are the main principles of treatment. For older children, the out-door treatment is best. For the younger ones, and for those with lung involvement, warm fresh air is better, unless the patient lives in such a climate as prevails in California when out-door treatment can always be prescribed. The diet should be milk given at frequent intervals during the height of the disease. Nutrition must be maintained. An abdominal band adds greatly to the comfort of the patient during severe paroxysms. Local applications to the throat are of little value. Inhalations of creosote or benzoin are very efficacious. In very severe paroxysms, it may be necessary to employ chloroform to ward off convulsions or asphyxia. Several drugs have been advocated for internal medication. Antipyrin is used to decrease the spasms but it should be given with great care as it is a cardiac depressant. It is better to give it with digitalis. The latter is also given when signs of a failing heart appear. Atropine in the form of belladonna may be employed but it has many un-

pleasant effects. The bromides occasionally do some good. Each complication must receive its proper treatment. Vaccine treatment[5] is said to diminish the number and severity of the paroxysms. The usual dose is fifty million given every other day and in severe cases this dose may be doubled.

Hemorrhages from the nose, mouth, and lungs, and intracranial hemorrhages may occur. The last are not frequent. Bronchitis, emphysema, and bronchopneumonia are very frequent and the last named complication is the most serious of all and is the cause of most deaths in pertussis. Vomiting, diarrhea and resulting malnutrition may occur. Convulsions, coma and paralysis may be serious complications. Under the excessive strain of the spasms the myocardium may fail. Prolapsus ani is not infrequent.

Pertussis is a very fatal disease in young children and infants. Exposure to infection should be avoided. Quarantine should be enforced until the paroxysmal cough is gone. Vaccines are of aid in the prevention and cure of the disease. Education of the public will do much to lessen the morbidity and mortality of this disease.

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233 Post St., San Francisco.

THE UROBILIN TEST IN MALARIA.*

By J. R. SNYDER, M. D., Sacramento.

Plehn,† in 1910, reported a study on urobilin and its significance in relation to malarial infection. Many Germans returning home after a stay in the East African Colony would apparently recover from their malarial fever and, later, especially after a return to the tropics, develop the disease. This work was the result of an endeavor to find some means of recognizing "latent malaria." In a case presenting chills and fever and plasmodia in the blood we have little trouble in making a diagnosis, but after 24 to 48 hours administration of quinine the plasmodia disappear from the blood stream. Further, in malarial countries where a prophylactic dose of quinine is regularly administered it has been found that a certain proportion of the population develops a strain of the plasmodia unaffected by quinine. They may be present in large numbers without characteristic symptoms. An increase of large mononuclear cells persists for from three to six weeks after the acute phase of the malady. Polychromatophilia may persist for several months after a severe malaria, but on the other hand may disappear before the malaria has been entirely eradicated. Here also one has to rule out chronic lead poisoning and secondary anemias from other causes. The search for these blood findings is rather laborious and results are sometimes misleading. Plehn from autopsies made in Africa found that there were in malaria early inflammatory changes in the liver, and it is upon this finding that the rational of the urobilin is based.

Urobilin arises in the intestine by reduction of bilirubin through bacterial activity.

The urobilin is absorbed and carried to the liver. A normal liver sends it back to the intestines by the bile duct, where it is then excreted. An inflamed liver from whatever cause allows it to escape to the blood stream, where a portion of it is excreted through the kidneys. Therefore the presence of urobilin in the urine is not specific, for malaria, as any inflammatory liver lesion may produce the change. However, in our series the diagnosis of the liver cases which gave the test was so evident there was no trouble in differentiation. Where we meet great blood-tissue destruction, as in advanced pulmonary tuberculosis, or with blood absorption after injuries, and very occasionally in a normal man one finds a faint positive which is easily distinguished.

The technic of the test is very simple: Add an equal part (2-3 cc.) of a saturated solution of zinc acetate in absolute alcohol to the urine; then two drops of a special 1-2-50 Lugol's solution; shake and filter. A fluorescence in the filtrate indicates a positive reaction. In a series of 56 malaria sufferers who entered the Sacramento County Hospital last summer we found the plasmodia after repeated examinations in but 14 cases, while the urine gave 46 positives. The fluorescence was present in all cases with plasmodia. In 39 controls we found 3 positives; two late cases of pulmonary tuberculosis and one of cancer of liver with extreme cachexia and bile in the urine. The controls were typhoid, pulmonary tuberculosis, cardionephritics, gall stones, carcinoma of liver, lobar pneumonia and normal individuals. The following tabulation makes clearer the results obtained:

Total number of cases tested	96
Total number of malarias (clinical)	56
Total number of malarias with positive blood findings	14 or 25%
Total number of malarias with positive urine findings	46 or 82%
Total number of control cases	40
Total number with positive urine findings	3 or 7%

In a valley where malaria is prevalent and quinine-taking a great deal more prevalent, the differentiation of the subacute and quiescent malaria is sometimes not altogether easy. The seemingly satisfactory outcome of the urobilin test as an aid to the recognition of this type of malaria has caused us to add this test to the routine examination of all fever patients entering the medical wards. We hope to be able to present a further series for the consideration of the society later in the year.

* Read before the Sacramento Society for Medical Improvement, January 19, 1915.

† Plehn: Munch. Med. Wchschft., v. 56, p. 1733, Aug. 24, 1909.

ASTRAGALECTOMY FOR TUBERCULOSIS OF THE TARSUS.

(From the Orthopedic Clinic of Stanford University.)

By LEONARD W. ELY, M. D., San Francisco.

Tuberculosis of the tarsus or of the ankle always has been considered a most unfavorable disease for treatment. The best authorities in the past have recommended either extensive resections or amputation. The results of conservative treatment are extremely unsatisfactory. The peculiar structure of the tarsus, with its numerous small spongy bones and its several synovial cavities, renders the spread of the disease very easy, and its elimination by treatment extremely difficult. To determine the extent of the morbid process with any reasonable degree of certainty is practically impossible. Under the old theory of operating, unless every portion of tuberculous tissue were removed at operation, the operation would be useless.

Following out the ideas recently promulgated, that if the character of the bone marrow could be changed from lymphoid to fatty, tuberculosis no longer could exist in the bone, ankylosing operations have been devised and successfully carried out in joint tuberculosis, more especially of the knee, of the hip, and of the spine. On account of the peculiar structure of the ankle, mentioned above, the prospect for cure is possibly not so good in the ankle as in the other joints. In the following case an attempt was made to put these ideas into practice:

The patient is a shoemaker 25 years of age, who gave a history of having sprained his right foot about one and a half years previously, that is, about three years ago. The "sprain" was followed by pain, swelling, and disability. He was treated at first by passive hyperemia, then by baking. Later the diagnosis of tuberculosis was made and the disease was demonstrated radiographically in the posterior talo-calcaneal joint. Then followed a series of operations, such as bone scraping and removal of tuberculous foci in the talus. A laboratory examination showed tuberculosis microscopically. A secondary infection took place, and sinus formation was established. When first seen in October, 1913, the foot was moderately swollen, and presented a discharging sinus on its lateral aspect, below the lateral malleolus.

With but little hope of success, on account of the probable extent of the disease and the complicating pus infection, but with the possible chance of avoiding amputation, astragalectomy was determined upon, and was done October 5, 1913, at the Lane Hospital. The incision was the usual curved one on the lateral aspect of the foot. The ankle joint and the talo-navicular seemed normal, but the talo-calcaneal joint was badly involved. The talus was removed. The under surface of the tibia, the medial surface of the lateral malleolus, the upper surface of the calcaneus, and the posterior surface of the navicular were all freshened. Following out Whitman's idea, an attempt was made to subluxate the foot backward, but this attempt was not successful. In view of the presence of secondary infection the wound was drained. The foot was put up at right angles to the leg, in plaster of paris, with a window over the site of operation. A microscopical examination showed bone tuberculosis. The subsequent course of the case can be gathered from the notes.

Oct. 28, 1913—New Plaster dressing. No window.

Nov. 25, 1913—Patient can walk around and bear some weight on the foot.

Dec. 12, 1913—Plaster removed; slight discharge; new plaster.

Feb. 14, 1914—Complains of pain; plaster removed; some motion in the new ankle; sinus is healed.

Feb. 18, 1914—Sinus still healed; no evidence of active disease; plaster of paris.

Mar. 20, 1914—Plaster of paris removed.

Mar. 30, 1914—Small amount of motion present in the ankle; no pain, muscular spasm, or evidence of active disease.

May 5, 1914—Patient says he has pain when he remains seated too long in his business of shoemaking; must walk 4-5 miles a day in order to be comfortable!!

July 6, 1914—Patient in fine condition. Foot in slight calcaneus; about 20° of motion in ankle; slightly sensitive beneath lateral malleolus. This is the only sign of activity.

On March 8, 1915, when the patient was shown at the Cooper Clinical Society meeting, he was in excellent condition and presented no sign of active disease. His foot is in slight calcaneus. Bony anchylosis, even after the expiration of 17 months, had not taken place.

Now, it often has been said in discussions upon joint tuberculosis, that, after resection, the disease disappears on account of the complete rest afforded, and the resultant bony anchylosis, but complete rest *per se* is not the essential factor in the treatment, does not cure the disease, and is not necessary. In resections of the hip, with removal of the head, followed by dislocation of the stump of the femur on the dorsum of the ilium, anchylosis does not take place, and yet, if secondary infection be avoided, resection cures hip tuberculosis in the adult. It is doubtful if, even in the knee, bony ankylosis takes place until at least 18 months have elapsed, and yet knee joint tuberculosis in the adult can be cured by resection in much less time than 18 months.

Let it be emphasized again that the correct procedure in operations upon tuberculous joints in the adult is the destruction of the joint. With the destruction of the joint, the character of the bone marrow at the site of operation changes, the synovial membrane disappears, and tuberculosis can no longer flourish in that locality. Encapsulated tubercles may persist for years, but occasion no trouble so long as there is no true joint. Recent writers, notably Baer and Osgood, have shown that arthroplastic operations are capable, even after years, of lighting up the disease afresh. No joint, no lymphoid marrow and synovial membrane. No lymphoid marrow and synovial membrane, no joint tuberculosis.

Conclusion: To cure joint tuberculosis in the adult, destroy the joint.

BOOK REVIEWS

Field Hospital and Flying Column. Being the Journal of an English Nursing Sister in Belgium and Russia. By Violetta Thurstan. Published by G. P. Putnam's Sons, London and New York. 1915. Price $1.00.

An entertaining hour may be spent with this short sketch of the experiences of a Nursing Sister who got glimpses of "war at the front" in the present struggle in Europe. Her life in a Field Hospital in Belgium, though interesting, is not so

thrilling or unique as her hasty description of the work of the Flying Column of the Red Cross just behind the trenches in the Lodz region. One is impressed by the bravery with which the medical service with the scantiest surgical equipment and lowest possible issue of rations attempts, and at least partially attains, the impossible; and is amazed at the physical endurance that during a battle will stand days and nights of continuous nerve-racking surgical work under fire. We agree that compared with these our faculties are only about 10 per cent. awake during the ordinary routine of life. E. K.

Fever, Its Thermotaxis and Metabolism. By Isaac Ott, A. M., M. D., Professor of Physiology Medico Chirurgical College, Philadelphia; Member of American Physiological Society; Ex-President of American Neurological Association; etc., etc. Cloth, 166 pp.; 14 illustrations. Paul E. Hoeber, N. Y., Pub. Price, $1.50 net.

This small volume, which represents three lectures given to second-year students, covers part of the physiology of temperature. The subjects of the nervous centers supposed to control production and dissipation of heat, the influence of accessory agencies, such as peripheral nerve agencies and ductless glands, the relation in general between heat production and dissipation, and the metabolism during fever are the main subjects considered. Controversial considerations are mainly avoided: for example, when the author fails to suggest that there is a strong belief held by certain physiologists that there is no such center as a heat regulating center. As a matter of style, it might be suggested that the very numerous disjointed citations of laboratory findings without correlation or discussion make it difficult to follow the main argument in question—a criticism which applies to too much of the medical writing of today.

J. L. W.

SOCIETY REPORTS

FRESNO COUNTY.

The regular June meeting of the Fresno County Society was held in the office of Dr. Hely at Madera. A good number of members were present to enjoy the hospitality of our Madera colleagues, and those who were absent missed the best "feed" of recent times.

The papers of the evening were "The Remote Effects of Deflected Nasal Septum, With Some Operative Results of Submucus Resection," by Dr. Dewey R. Powell of Stockton and "Extra Ocular Palsies, With Report of a Case," by Dr. W. L. Benedict of Fresno. Both papers were carefully prepared and were of great value to the man in general practice.

Drs. E. J. Couey of Fresno and D. H. Ransom of Madera were elected to membership in the Society.

After some general discussion on the 1916 meeting of the State Society, which we hope will be in Fresno and after thanking our Madera members for their generous entertainment the meeting adjourned.

CLIFFORD D. SWEET, Assistant Secretary.

SAN FRANCISCO POLYCLINIC SOCIETY.

The regular alternate monthly meeting of the San Francisco Polyclinic Society was held at Polyclinic Building, 1535 Jackson Street, on Thursday, May 20 at 8:45 p. m. President Zobel in the chair. The scientific program was as follows:

1. Clinical demonstrations and remarks on a case of "Congenital High Blood Pressure," also case report of a case of "Hypersecretions of the Salivary Glands." Dr. J. Wilson Shiels.

2. Paper on "Indications for Mastoid Operation, Based on 100 Cases." Dr. Cullen F. Welty.

3. Paper on "Errors in Technique in the Use of Salvarsan." Dr. Wm. E. Stevens. Discussed by Drs. Martin Krotoszyner, G. F. Shiels, C. F. Welty, G. W. Hartman, J. W. Shiels, A. J. Zobel.

HARRY P. ROBARTS, Secy.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of May, 1915, the following meetings were held in the rooms of the society:

Medical Section, Tuesday, May 4th.

1. The Influence of the Study of Tropical Disease on General Medicine. Captain H. J. Nichols, Medical Corps, U. S. A. Discussed by Major Brooke and Drs. G. M. Converse, H. Gunn and H. Lisser.

2. Salvarsan in Tropical Diseases. Herbert Gunn. Discussed by Captain Nichols.

General Meeting Tuesday, May 11th.

1. Some Remarks on Industrial Insurance Work. M. E. Rumwell.

2. Internal Medicine in Relation to Industrial Accidents. R. Bine.

3. The Relation of the so-called Strained Back to Disability following Accidents. S. Hyman.

4. Traumatic Neuroses following Industrial Accidents; Prognosis and Treatment. W. F. Schaller.

5. Nerve Injuries; Their Influence on the Period of Disability. T. G. Inman.

6. The Relation of Old Age to Disability following Accidents. Emmet Rixford.

Discussed by M. R. Gibbons, C. C. Crane, J. T. Watkins, G. C. Macdonald, R. Bine and T. Inman.

Surgical Section, Tuesday, May 18th.

1. The Surgical Pathology of War. Benjamin Jablons, Pathologist to the American Ambulance, Paris, France.

2. Surgical Conditions of the Mouth from the Dental Standpoint. James G. Sharp.

3. Radiographic Diagnosis of Chronic Infections at the Roots of the Teeth. Josef Novitsky. Discussed by Henry Horn.

Eye, Ear, Nose and Throat Section, Tuesday, May 25th.

1. Evidences of Syphilis in the Mouth. E. D. Chipman.

2. Syphilitic Lesions of the Brain and Meninges giving Eye and Ear Symptoms. W. F. Schaller. Discussed by K. Pischel, C. Welty, H. R. Oliver, H. B. Graham and G. P. Wintermute.

3. The Diagnosis of Congenital Syphilis. H. H. Yerington.

4. The Problem of Salvarsan in the Treatment of Neuritis of the Auditory Nerve. G. P. Wintermute. Discussed by H. R. Oliver, H. McNaught, J. von Werthern, K. Pischel, H. Barkan, H. B. Graham, E. D. Chipman and T. G. Inman.

AMERICAN PHARMACEUTICAL ASSOCIATION

May 24, 1915.

Dear Sir:

As chairman of the Publicity Committee of the allied drug interests, I write you with the hope that you will give the coming conventions of the American Pharmaceutical Association and the California Pharmaceutical Association prominent space in the next issues of your paper.

The meetings will be held in the Auditorium, the $2,000,000 building owned by San Francisco and built especially to accommodate the 800 conventions and congresses that are scheduled to meet in San Francisco in 1915.

This promises to be an important gathering of

the American Pharmaceutical Association, for many of the best known pharmacists of the United States promise to be present. Frank A. Freericks, Chairman on Education and Legislation, has in preparation a "Model Pharmacy Law" containing new features, some of which, if adopted, will materially change the practice of pharmacy as known today.

Entertainment will be plentifully provided, and the enclosed tentative program will serve as a guide for the fun and frolic in store for all who attend. Headquarters will be maintained in the Claus Spreckels Building, Third and Market streets. Hotel rates are very reasonable; rail rates have been reduced to one way fare for the round trip. California is at its best this year and the attractions of the Panama-Pacific International Exposition should be incentive enough to persuade everyone to spend a few weeks in the "Land of Sunshine."

D. R. REES,
Chairman Publicity Committee.

Tentative Program of the California Pharmaceutical Association.

Monday, August 9, 1915—Reception and Dansant at Bellevue Hotel.

Tuesday, August 10, 1915—Evening, Fior D'Italia Dinner.

Wednesday, August 11, 1915—Afternoon, Ball at California Building; Evening, P. P. I. E.

Thursday, August 12, 1915—Afternoon, Card Party for Ladies.

Friday, August 13, 1915—Morning, 10 A. M., Trolley Trip; 1 P. M., Luncheon, Old Faithful Inn, P. P. I. E.; Afternoon, 2:30 to 3:30. Organ Recital at Festival Hall, P. P. I. E.

By days.

The following is the tentative program of the sixty-third annual meeting of the American Pharmaceutical Association, to be held in San Francisco, August 9-14, 1915:

Monday, August 9—9:00 A. M., Meeting of the Council. 3:00 P. M., First General Session; Meeting of Committee on Nominations; Meeting of Committee on Resolutions. 7:30 P. M., House of Delegates. 9:30 P. M., President's Reception.

Tuesday, August 10—9:30 A. M., Second General Session. 2:00 P. M., Scientific Section; Women's Section; Commercial Section. 7:30 P. M., Meeting of the Council; House of Delegates; Ladies' Theater Party.

Wednesday, August 11—9:30 A. M., Section on Education and Legislation; Commercial Section. 12:30 P. M., Luncheon of College Alumni. 2:00 P. M., Scientific Section; Section on Practical Pharmacy and Dispensing (and Pharmacopoeias, Formularies and Standards); National Association of Boards of Pharmacy; American Conference of Pharmaceutical Faculties. 7:30 P. M., Meeting of Council; National Association of Boards of Pharmacy; American Conference of Pharmaceutical Faculties; Ladies' Reception.

Thursday, August 5—Sessions of the National Association of Boards of Pharmacy. The detailed program will be announced later.

Friday, August 6—9:30 A. M., First Session of the American Conference at the California College of Pharmacy. 12:30 P. M., Luncheon at the Golden Gate Park Casino. 2:00 P. M., Visit to the Park Museum. 3:30 P. M., Second Session of the Conference. 7:30 P. M., Visit to the Museum of Anthropology and Lecture. (The National Association of Boards of Pharmacy contemplates holding sessions on this day.)

Saturday, August 7—9:30 A. M., Joint session of the Boards of Pharmacy, the Conference and the Section on Education and Legislation. 2:30 P. M., The Conference may hold a third session. (The afternoon and evening may be devoted to a visit to the Exposition.)

ADDRESS TO BE DELIVERED OVER THE BODY OF A YOUNG MAN DEAD OF TYPHOID FEVER.

By Assistant Surgeon General W. C. RUCKER, United States Public Health Service, Washington, D. C.

We have met to-day for the sad purpose of performing the last solemn rites over the body of one who has passed into the Great Beyond. Our hearts are overflowing with grief at the untimely ending of this life so full of promise. He had just begun his career. Still in the time of sowing, he had not reached the point where he could see the grain begin to grow, much less had he reached the time of harvest. In thinking about this matter, many may be led to wonder why it has pleased the Divine Creator to remove this promising young person from our midst, to cut short a life so well begun. They bow their heads and say "Thy will be done," but without understanding the logic of it all. If they will but consider for a moment they will realize that the reason they do not understand it is because they have not themselves been logical. They assume that the responsibility for the death of this young man, and the grief, sorrow and loss which it entails, lies with the Creator, whereas the immediate responsibility in every case of typhoid fever rests upon man himself. God, in his wisdom, has placed mankind in possession of the knowledge of the causative agent and the means of its spread. He has opened up our minds that we may understand how this disease may be prevented and avoided, and He has given us an almost infallible weapon with which to protect ourselves from the attacks of the germ which causes the disease. Therefore, this bereavement means that someone has failed to make use of these God-given means of protecting human life. Many a time, as in the present instance, it is the innocent bystander who suffers from the neglect of another; from somebody's failure to realize that he is his brother's keeper. It is impossible in the present instance to exactly fix the responsibility for the sickness and death of the departed, but some man or woman is responsible because only human beings have typhoid fever, and the disease cannot be acquired excepting from some person who has the disease or who is harboring the germs which cause it. Like every other person who contracts this disease, this young man unwittingly took into his body something which came from the body of another person. Possibly he may have received it directly or indirectly from some person who suffered from a very light attack of typhoid fever, and who by the carelessness of his habits subsequent to his recovery was the means, possibly the innocent means, of the spread of the disease to other people. It may be that someone who was wantonly careless in the manner in which he disposed of the waste products of his body brought this grief upon the family of the deceased, and this economic loss to our community. Perhaps the responsibility in the present instance does not lie with any one individual, but with some town or city which has been careless in the method of ridding itself of its offscourings, or has been indifferent to the laws of sanitation in securing its drinking water.

At any rate, the death of this young man could have been prevented! It was entirely unnecessary. It is the price which we are made to pay for somebody's ignorance and carelessness. The day is fast approaching when such sacrifices shall cease to be. It will arrive only when we have learned that the presence of typhoid in a community means that someone has been criminally negligent of his duty. To-day, with hearts bowed down by the grief of our loss, let us resolve that we will henceforth so order our lives that we may conduct them without menace to others. Let us take unto ourselves the lesson of this hour, and in our own sorrow fix our determination to prevent the coming of sorrow to others. If we do this, this dead shall not have died in vain.

PANAMA CANAL.

Dear Sir:

Enclosed please find descriptive booklet of the Panama Canal in San Francisco, on the Zone. We feel justified in bringing this attraction to your attention from the fact that at no other International Exposition has there been installed an Exhibit of such National significance and magnitude, and one that appeals so directly to the people at large.

For its educational value alone no person who visits the Panama-Pacific International Exposition can afford to miss viewing this absolutely accurate reproduction, costing in round figures half a million dollars.

Quoting ex-Vice-President C. W. Fairbanks: "It is an exhibition every man, woman and child in the United States should see."

The construction of the Panama Canal has cost the United States Government to date over $375,000,000.00. While viewing the Panama-Pacific International Exposition, do you not think that its reproduction is worthy of a visit when your society is in convention here.

May we respectfully ask that if you can see your way clear so to do, you will call the attention of your members to these few facts, and the advisability of visiting this, the premier attraction of the P. P. I. E. Very truly yours,

PANAMA CANAL EXHIBITION CO.
Geo. McClellan, Manager.

MEDICAL BILLS.

To the State Journal:

During the session of the forty-first legislature, just completed, several bills of great interest to the practitioners of medicine in the State of California were brought up for consideration. In the discussion of these measures before the committees and upon the floor of the House and Senate, it was made quite evident that the chiropractors, mechano-therapists and others of that ilk had a great deal more influence than their numbers or medical importance would justify. This was due solely to the persistent campaign of speeches, letters and telegrams maintained by them and by their sympathizers. The legislature had no desire to pass a vicious medical practice act. When hundreds of messages come in favoring and none opposing any bill, it is likely to be acted upon favorably. It is the intention of the chiropractors to canvass the state before the next election in support of their bill which, as No. 46, was defeated in November, 1914. The apparent indifference toward all medical legislation shown by the representatives of the regular school and frequently remarked upon by our friends in the legislature is largely due to lack of information. The rank and file of the county societies do not know what measures affecting medical practice are before the legislative bodies, what position their own representatives are taking, and not infrequently, alas, who their Senator and Assemblymen are. The most time-consuming difficulty in the discussion of the medical laws had been the explaining to the legislators of the need for and requirements of a decent medical practice act. This difficulty could and should be attended to before they leave their own constituencies and come to Sacramento. On this account it has seemed advisable to the directors of this society to compile and transmit to the secretary of each county society a list of bills of special interest to medical men with a short résumé of each, and append thereto a list of the votes upon each measure in the Senate and the House. Thus the physicians of each community can, if they so desire, express by resolution or by letter their appreciation (or otherwise) of the acts of their own particular representative.

Senate Bill No. 443. Introduced by Senator Benson. Drafted by L. H. Ward, attorney for the Board of Medical Examiners; approved by the regulars, homeopaths and eclectics upon the Board and in the state, was drawn so as to improve and make more workable the present act. Provides:

(1) An easier and more certain method of prosecuting advertising specialists, abortionists, and the like. (2) For the publishing of an official directory. (3) Eliminates several difficult features in the administration of the law.

Vote—Senate.

Ayes—J. N. Anderson, Santa Ana; D. J. Beban, San Francisco; F. H. Benson, San Jose; E. S. Birdsall, East Auburn; A. H. Breed, Piedmont; W. J. Carr, Pasadena; W. F. Chandler, Fresno; P. C. Cohn, Folsom; J. J. Crowley, San Francisco; T. F. Finn, San Francisco; L. J. Flaherty, San Francisco; F. G. Gerdes, San Francisco; G. J. Hans, Oakland; H. C. Jones, San Jose; W. Kehoe, Eureka; E. A. Luce, San Diego; H. H. Lyon, Los Angeles; L. J. Maddux, Modesto; D. W. Mott, Santa Paula; W. S. Scott, San Francisco; H. W. Slater, Santa Rosa; E. K. Strowbridge, Hayward; N. W. Thompson, Alhambra; E. J. Tyrrell, Oakland; E. I. Wolfe, San Francisco.

Noes—H. S. Benedict, Los Angeles; Wm. E. Brown, Los Angeles; E. M. Butler, Los Angeles; P. F. Cogswell, El Monte; W. E. Duncan, Oroville; W. R. Flint, Hollister; J. L. C. Irwin, Hanford; L. M. King, Redlands; J. C. Owens, Richmond; C. F. Purkitt, Willows; W. B. Shearer, Yreka; J. W. Stuckenbruck, Acampo.

Vote—Assembly.

Ayes—F. W. Anderson, Oakland; P. J. Arnerich, Alameda; G. W. Ashley, Stockton; W. A. Avey, Riverside; A. L. Barlett, Los Angeles; K. Boude, Sebastopol; H. W. Brown, Colma; B. Bruck, St. Helena; J. J. Byrnes, San Francisco; V. J. Canepa, San Francisco; W. W. Chenoweth, Sacramento; G. W. Downing, Los Angeles; L. Edwards, Stockton; R. G. Edwards, Saticoy; D. Ferguson, Oakland; L. Gebhart, Sacramento; G. Gelder, Berkeley; C. W. Godsil, San Francisco; W. W. Harris, Bakersfield; D. R. Hayes, San Francisco; G. H. Johnson, San Bernardino; I. E. Kramer, Santa Barbara; W. A. Long, Hanford; L. L. Lostutter, Pomona; J. E. Marron, San Francisco; J. J. McDonald, San Francisco; W. A. McDonald, San Francisco; H. E. McPherson, Santa Cruz; B. B. Meek, Oroville; F. H. Mouser, Los Angeles; J. S. Phelps, Redlands; P. C. Phillips, Los Angeles; J. F. Quinn, Eureka; H. B. Ream, Sisson; E. S. Rigdon, Cambria; J. A. Rominger, Long Beach; J. J. Ryan, San Francisco; W. T. Satterwhite, Oakland; M. L. Schmitt, San Francisco; C. E. Scott, Los Angeles; F. C. Scott, Visalia; L. D. Scott, Fresno; W. R. Sharkey, Martinez; A. F. Shartel, Alturas; E. L. Sisson, Red Bluff; L. A. Spengler, Los Angeles; L. N. Tabler, Knight's Landing; H. A. Wishard, Los Angeles; H. W. Wright, South Pasadena; T. M. Wright San Jose; C. C. Young, Berkeley.

Noes—F. E. Judson, Escondido.

Senate Bill No. 558. Introduced by Senator Brown. Provides:

That the State Board of Health shall consist of six duly licensed practicing physicians of the State and one sanitary engineer. No more than two of the physicians shall be practitioners of the same school of medicine. It is the intention of this law to compel the Governor to appoint sectarians upon the Board of Health when what we want is sanitarians.

Vote—Senate.

Ayes—J. W. Ballard, Los Angeles; D. J. Beban, San Francisco; H. S. Benedict, Los Angeles; W. E. Brown, Los Angeles; E. M. Butler, Los Angeles; A. E. Campbell, San Luis Obispo; W. C. Carr, Pasadena; P. F. Cogswell, El Monte; J. J. Crowley, San Francisco; W. E. Duncan, Oroville; T. F. Finn, San Francisco; L. J. Flaherty, San Francisco; W. R. Flint Hollister; F. C. Gerdes San Francisco; J. L. C. Irwin, Hanford; W. Kehoe,

Eureka; L. M. King, Redlands; E. A. Luce, San Diego; H. H. Lyon, Los Angeles; J. C. Owens, Richmond; C. F. Purkitt, Willows; B. F. Rush, Suisun; W. S. Scott, San Francisco; W. B. Shearer, Yreka; H. W. Slater, Santa Rosa; J. W. Stuckenbruck, Acampo; E. I. Wolfe, San Francisco.

Noes—J. N. Anderson, Santa Ana; F. H. Benson, San Jose; E. S. Birdsall, East Auburn; A. H. Breed, Piedmont; W. F. Chandler, Fresno; P. C. Cohn, Folsom; H. C. Jones, San Jose; L. J. Maddux, Modesto; D. W. Mott, Santa Paula; N. W. Thompson, Alhambra; E. J. Tyrrell, Oakland.

Vote—Assembly.

Ayes—F. W. Anderson, Oakland; P. J. Arnerich, Alameda; G. W. Ashley, Stockton; R. P. Benton, Los Angeles; M. B. Brown, Sonora; K. Boude, Sebastopol; J. J. Byrnes, San Francisco; V. J. Canepa, San Francisco; W. M. Collins, San Francisco; G. Conard, San Diego; R. G. Edwards, Saticoy; D. Ferguson, Oakland; C. W. Godsil, San Francisco; D. R. Hayes, San Francisco; J. J. Hayes, San Francisco; F. E. Judson, Escondido; R. I. Kerr, Jackson; I. E. Kramer, Santa Barbara; W. A. Long, Hanford; L. L. Lostutter, Pomona; C. W. Lyon, Venice; J. J. McDonald, San Francisco; W. A. McDonald, San Francisco; J. S. McKnight, Los Angeles; H. E. McPherson, Santa Cruz; B. B. Meek, Oroville; F. H. Mouser, Los Angeles; J. S. Phelps, Redlands; P. C. Phillips, Los Angeles; H. B. Ream, Sisson; E. S. Rigdon, Cambria; J. J. Ryan, San Francisco; G. W. Salisbury, Santa Rosa; M. L. Schmitt, San Francisco; L. D. Scott, Fresno; W. R. Sharkey, Martinez; E. L. Sisson, Red Bluff; L. P. Spengler, Los Angeles; R. E. Wills, Brawley; H. W. Wright, South Pasadena; T. M. Wright, San Jose; C. C. Young, Berkeley.

Noes—None.

Senate Bill No. 102. Introduced by Senator Brown. Provides:

That humane officers shall have access at all times to laboratories where animal experimentation is going on; practically means the end of laboratory work, both research and diagnostic in California.

Vote—Senate.

Ayes—J. N. Anderson, Santa Ana; J. W. Ballard, Los Angeles; H. S. Benedict, Los Angeles; F. H. Benson, San Jose; A. H. Breed, Piedmont; W. E. Brown, Los Angeles; E. M. Butler, Los Angeles A. E. Campbell, San Luis Obispo; W. J. Carr, Pasadena; P. F. Cogswell, El Monte; P. C. Cohn, Folsom; J. J. Crowley, San Francisco; W. E. Duncan, Oroville; T. F. Finn, San Francisco; L. J. Flaherty, San Francisco; W. R. Flint, Hollister; F. C. Gerdes, San Francisco; J. L. C. Irwin, Hanford; H. C. Jones, San Jose; W. Kehoe, Eureka; L. M. King, Redlands; E. A. Luce, San Diego; L. J. Maddux, Modesto; D. W. Mott, Santa Paula; B. F. Rush, Suisun; H. W. Slater, Santa Rosa; E. K. Strowbridge, Hayward; J. W. Stuckenbruck, Acampo; E. J. Tyrrell, Oakland; E. I. Wolfe, San Francisco.

Noes—W. F. Chandler, Fresno.

Vote—Assembly.

Ayes—F. W. Anderson, Oakland; P. J. Arnerich, Alameda; W. A. Avey, Riverside; A. L. Bartlett, Los Angeles; G. Beck, Livermore; R. P. Benton, Los Angeles; K. Boude, Sebastopol; A. E. Boyce, Monterey; M. B. Browne, Sonora; J. C. Burke, Santa Ana; V. J. Canepa, San Francisco; L. B. Cary, Reedley; H. A. Chamberlin, Los Angeles; G. W. Downing, Los Angeles; R. G. Edwards, Saticoy; F. W. Ellis, Livingston; D. Ferguson, Oakland; G. Gelder, Berkeley; C. W. Godsil, San Francisco; W. W. Harris, Bakersfield; J. J. Hayes, San Francisco; F. E. Judson, Escondido; I. E. Kramer, Santa Barbara; L. L. Lostutter, Pomona; C. W. Lyon, Venice; C. C. McGray, Redding; J. J. McDonald, San Francisco; W. A. McDonald, San Francisco; B. B. Meek, Oroville; F. H. Mouser, Los Angeles; J. S. Phelps, Redlands; P. C. Phillips, Los Angeles; N. J. Prendergast, San Francisco; F. N. Rodgers, San Francisco; J. A. Rominger, Long Beach; J. J. Ryan, San Francisco; M. L. Schmitt, San Francisco; C. E. Scott, Los Angeles; L. D. Scott, Fresno; W. R. Sharkey, Martinez; E. L. Sisson, Red Bluff; L. A. Spengler, Los Angeles; R. E. Wills, Brawley; H. A. Wishard, Los Angeles; H. W. Wright, South Pasadena; T. M. Wright, San Jose; C. C. Young, Berkeley.

Noes—B. Bruck, St. Helena; W. A. Long, Hanford; H. B. Ream, Sisson.

Senate Bill No. 310. Introduced by Senator Scott. Provides:

A separate Board of Medical Examiners for drugless healers. No more than two can be of any one school of drugless practice. Admits to practice all illegal practitioners who have been doing business in the State for the past two years, practically the same as No. 46 defeated last November.

Vote—Senate.

Ayes—J. W. Ballard, Los Angeles; H. S. Benedict, Los Angeles; W. E. Brown, Los Angeles; E. M. Butler, Los Angeles; A. E. Campbell, San Luis Obispo; W. E. Duncan, Oroville; T. F. Finn, San Francisco; L. J. Flaherty, San Francisco; W. R. Flint, Hollister; F. C. Gerdes, San Francisco; J. L. C. Irwin, Hanford; W. Kehoe, Eureka; L. M. King, Redlands; C. F. Purkitt, Willows; W. S. Scott, San Francisco; W. B. Shearer, Yreka; J. W. Stuckenbruck, Acampo; E. I. Wolfe, San Francisco.

Noes—J. N. Anderson, Santa Ana; D. J. Beban, San Francisco; F. H. Benson, San Jose; E. S. Birdsall, East Auburn; A. H. Breed, Piedmont; W. J. Carr, Pasadena; P. F. Cogswell, El Monte; P. C. Cohn, Folsom; J. J. Crowley, San Francisco; H. C. Jones, San Jose; E. A. Luce, San Diego; L. J. Maddux, Modesto; D. W. Mott, Santa Paula; B. F. Rush, Suisun; H. W. Slater, Santa Rosa; E. K. Strowbridge, Hayward; N. W. Thompson, Alhambra.

Assembly Bill No. 256. Introduced by Mr. Bartlett. Provides:

For a Board of Chiropractic examiners, without other control licenses a group of practitioners who are unable to obtain licenses under the present liberal act.

Vote—Senate.

Ayes—J. W. Ballard, Los Angeles; H. S. Benedict, Los Angeles; W. E. Brown, Los Angeles; E. M. Butler, Los Angeles; P. F. Cogswell, El Monte; W. E. Duncan, Oroville; F. C. Gerdes, San Francisco; J. L. C. Irwin, Hanford; W. Kehoe, Eureka; L. M. King, Redlands; W. S. Scott, San Francisco; W. B. Shearer, Yreka; H. W. Slater, Santa Rosa; J. W. Stuckenbruck, Acampo; N. W. Thompson, Alhambra.

Noes—J. N. Anderson, Santa Ana; D. J. Beban, San Francisco; F. H. Benson, San Jose; E. S. Birdsall, East Auburn; A. H. Breed, Piedmont; W. J. Carr, Pasadena; W. F. Chandler, Fresno; P. C. Cohn, Folsom; T. F. Finn, San Francisco; H. C. Jones, San Jose; E. A. Luce, San Diego; D. W. Mott, Santa Paula; E. K. Strowbridge, Hayward.

Vote—Assembly.

Ayes—F. W. Anderson, Oakland; P. J. Arnerich, Alameda; A. L. Bartlett, Los Angeles; G. Beck, Livermore; R. P. Benton, Los Angeles; K. Boude, Sebastopol; A. E. Boyce, Monterey; H. W. Brown, Colma; H. A. Chamberlain, Los Angeles; L. L. Dennett, Modesto; R. G. Edwards, Saticoy; G. Gelder, Berkeley; W. W. Harris, Bakersfield; H. Hawson, Fresno; F. E. Judson, Escondido; W. P. Kennedy, San Francisco; R. I. Kerr, Jackson; W. A. Long, Hanford; L. L. Lostutter, Pomona; J. E. Manning, San Anselmo; C. C. McCray, Redding; B. B. Meek, Oroville; F. H. Mouser, Los Angeles; J. A. Pettis, Fort Bragg; J. S. Phelps, Redlands; P. C. Phillips, Los Angeles; N. J. Prendergast, San Francisco; J. F. Quinn, Eureka; H. B. Ream,

Sisson; F. N. Rodgers, San Francisco; J. A. Rominger, Long Beach; W. T. Satterwhite, Oakland; M. L. Schmitt, San Francisco; F. C. Scott, Visalia; L. D. Scott, Fresno; W. R. Shartel, Martinez; E. L. Sisson, Red Bluff; L. A. Spengler, Los Angeles; L. N. Tabler, Knight's Landing; H. J. Widenmann, Vallejo; R. E. Wills, Brawley; H. W. Wright, South Pasadena.

Noes—None.

Assembly Bill No. 1435. Introduced by Mr. Cary. Provides:

That before a charter shall be issued for a medical school, the founder of the school shall make an affidavit stating what equipment the founders possess for giving a decent medical education. No charter shall be issued until a committee composed of the Superintendent of Public Instruction, Dean of the University of California and dean of the Medical School of the University of California shall have passed favorably upon this equipment. This was intended to obviate the "fly by night," "third story back," "one man medical school" graduate, who has been swindled out of his time and money under the impression that he is getting a medical education and who appears at every session of the Legislature crying out against the intolerable persecutions of the "Medical Trust." Under the present existing circumstances anybody with $50.00 can get a charter and found a legal medical school. There is no possible regulating of that school until one of its graduates comes before the Medical Examiners for examination. This undoubtedly works a hardship upon certain individuals. It seems most certain that the control of medical schools should begin when the school begins.

Vote—Assembly.

Ayes—A. L. Bartlett, Los Angeles; G. Beek, Livermore; K. Boude, Sebastopol; A. E. Boyce, Monterey; B. Bruck, St. Helena; V. J. Canepa, San Francisco; L. B. Cary, Reedley; H. A. Chamberlin, Los Angeles; E. S. Ellis, Livingston; R. I. Kerr, Jackson; C. C. McCray, Redding; F. H. Mouser, Los Angeles; J. A. Pettis, Fort Bragg; J. S. Phelps, Redlands; J. F. Quinn, Eureka; H. B. Ream, Sisson; E. S. Rigdon, Cambria; J. A. Rominger, Long Beach; J. J. Ryan, San Francisco; C. E. Scott, Los Angeles; F. C. Scott, Visalia; W. R. Sharkey, Martinez; H. J. Widenmann, Vallejo; H. A. Wishard, Los Angeles; T. M. Wright, San Jose; C. C. Young, Berkeley.

Noes—F. W. Anderson, Oakland; P. J. Arnerich, Alameda; G. W. Ashley, Stockton; W. A. Avey, Riverside; R. P. Benton, Los Angeles; H. W. Brown, Colma; M. B. Browne, Sonora; W. W. Chenoweth, Sacramento; L. L. Dennett, Modesto; L. Edwards, Stockton; R. G. Edwards, Saticoy; D. Ferguson, Oakland; G. Gelder, Berkeley; H. Hawson, Fresno; D. R. Hayes, San Jose; J. J. Hayes, San Francisco; G. H. Johnson, San Bernardino; F. E. Judson, Escondido; I. E. Kramer, Santa Barbara; W. A. Long, Hanford; J. E. Manning, San Anselmo; J. E. Marron, San Francisco.

BOARD OF DIRECTORS, SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT,

Per J. B. HARRIS, President.
F. F. GUNDRUM, Secretary.

THE BAKING-POWDER PROBLEM.

For a number of years there has been much discussion with regard to the effects of baking powders on the health. While minor objections have been urged against all baking powders, the principal charge of unwholesomeness has been made against baking powders containing alum. This objection is based primarily on the injurious effects of large quantities of aluminum salts. To this objection the answer has been made that the process of decomposition which liberates the leavening gas when alum baking powder is used, produces an oxid of aluminum which is insoluble, and hence not injurious. For the facts in this matter to be fully understood, it must be remembered that the so-called alum now used in baking powder is not the alum used in medicine, being a sodium alum (sodium aluminum sulphate) instead of the official potassium salt. This point is held by some to be important in view of the effects of potassium salts on the system. Cream of tartar is a potassium salt, being potassium acid tartrate.

In the discussion of the baking-powder question, it must be remembered that the practical application of the facts concerns only small amounts of these salts and contemplates an occasional and not a constant use. Few people habitually consume breads made from baking powder, hence the amount of potassium introduced into the system by baking powder is unlikely to be of serious moment as regards health. Potassium salts are frequently taken as constituents of vegetable food, and yet there is no evidence that they disturb metabolism in any way. The question whether alum used in this way is injurious has been settled by the investigations of the Referee Board of Scientific Experts appointed by President Roosevelt, and its decision may be considered as coming from the court of highest authority. The investigation of this board covered a period of several years and was the most extensive single investigation ever conducted as to the healthfulness of alum baking powders. The distinguished character and personnel of the board itself lends additional weight to its findings. The board consisted of the following men:

Dr. Ira Remsen, president of Johns Hopkins University.

Dr. Russell H. Chittenden, professor of physiological chemistry, Yale University, and director of the Sheffield Scientific School.

Dr. John H. Long, professor of chemistry in the Northwestern University Medical School.

Dr. Alonzo E. Taylor, professor of physiological chemistry, University of Pennsylvania.

Dr. Theobald Smith, professor of comparative pathology, Harvard University.

The board made the following findings:

"Aluminus compounds when used in the form of baking powders in foods have not been found to affect injuriously the nutritive value of such foods.

"Aluminum compounds when used in the form the form of baking powders, in small quantities, have not been found to contribute any poisonous or other deleterious effect which may render the said food injurious to health. The same holds true for the amount of aluminum which may be included in the ordinary consumption of aluminum baking powders furnishing up to 150 mg. (2.31 grains) of aluminum daily.

"Aluminum compounds when added to foods in the form of baking powders, in large quantities up to 200 mg. (3.09 grains) or more per day, may provoke mild catharsis.

"Very large quantities of aluminum taken with foods in the form of baking powders usually provoke catharsis. This action of aluminum baking powders is due to the sodium sulphate which results from the reaction.

"The aluminum itself has not been found to exert any deleterious action injurious to health, beyond the production of occasional colic when very large amounts have been ingested.

"When aluminum compounds are mixed or packed with a food the quality or strength of said food has not been found to be thereby reduced, lowered or injuriously affected."

In short, the board concludes that alum baking powders are no more harmful than any other baking powders, but that it is wise to be moderate in the use of foods that are leavened with baking powder.

In Dr. Taylor's conclusions, a different aspect

of the baking-powder question is brought out. It is shown that the product of all forms of baking powders is laxative, and the suggestion is made that the laxative effects of the continuous use of breads made with baking powder may be injurious. The objection applies to the cream of tartar baking powder which leaves a residue of Rochelle salts, to the phosphate baking powders which leave the phosphate of sodium and to the alum baking powders which also leave the sodium sulphate. Dr. Taylor says: "Apparently, therefore, at present at least, the use of baking powder is associated with the introduction into the alimentary tract of a certain amount of saline cathartic, the salt differing with the use of a particular type of baking powder." In connection with this objection, the amount of soluble residue left by the decomposition of the baking powder becomes of importance.

Here again, the pertinence of the objection depends on the quantity likely to be eaten. In no case is it likely that a person would consume bread or biscuits enough to get an appreciable effect on the bowels from the laxative produced.

The criticisms with reference to the action of baking powders indicate a tendency to magnify quite incidental matters whenever they seem to favor the interest of one or other manufacturer. Thus the tartrate was at one time highly regarded because it was a product which was destroyed in the system, leaving a natural constituent of the body, that is, potassium carbonate. More recently it has been discovered that the tartrates are only partially metabolized in the system, removing the supposed advantage of the tartrate powders. On the other hand, there is a disposition to emphasize experiments tending to show the power of tartrates to affect the kidneys injuriously, although there is no evidence that such an injurious action can occur from the small quantity present in baking powders. While the objections to alum are unjustified, the physician will do well to inquire carefully into the probability of any alleged injury occurring from other forms of baking powders.—From Journal of Indiana State Medical Association.

THE BACTERIOLOGY OF APPENDICITIS.

"The credit of establishing the tremendous significance of inflammation of the vermiform appendix belongs to the medical profession of the United States which, it now seems likely," says The Journal of the American Medical Association, "is also to make noteworthy contributions to the study of the etiology of the disease. The part played by foreign materials is no longer emphasized, since they are only rarely encountered. Even fecal concretions, which were formerly charged with responsibility for a large percentage of attacks, are now regarded as being produced within the appendix itself, rather than entering this organ from the cecum. Despite the fact that concretions and foreign bodies are always a menace and are capable of initiating destructive as well as irritating effects on the mucosa, the chief interest in the etiology of appendicitis at the present moment centers in its bacteriology.

"The preponderant micro-organism found in cases of appendicitis is undoubtedly the colon bacillus. Sometimes it is present in pure culture; frequently it is associated with other organisms such as streptococci or staphylococci. The majority of cases appear to represent a mixed infection. It has been assumed as probable by some writers that the milder cases with more definitely localized peritonitis and relatively benign clinical symptoms are principally due to colon infection, while the more intense cases are of streptococcic or anaerobic nature.

"Dr. E. C. Rosenow of the Memorial Institute for Infectious Diseases, Chicago, has thrown some light on the development of appendicitis by a careful differential bacteriologic study of the fluids and tissues in and about the appendix and of the tonsils and other possible foci of infection, together with introduction of the isolated strains of micro-organisms into animals. In the lumen of the appendix the colon bacillus was always found in predominating numbers, whereas the cultures from the wall showed that the chief bacteria there were streptococci. The nature of the bacterial flora of the tonsils in the different cases was not so characteristic, though streptococci were found in all.

"Rosenow's experiments indicate that, in the absence of foreign bodies, appendicitis commonly is a hematogenous infection, secondary to some distant focus like the tonsil. The striking feature is the demonstration that the disease develops when for some reason the organisms in this focus, usually streptococci, have acquired an elective affinity for the appendix and at the same time gain entrance into the circulation. In animal injections the tonsillar strains of micro-organisms from human cases produced appendicitis in nineteen of twenty-nine, the appendix strains in twenty-two of thirty—a total of forty-one out of fifty-nine trials. In further accord with the view advanced is the observation that after cultivation on artificial mediums for a short time the elective affinity is soon lost, and strains isolated from human tonsils some time after appendectomy also appear without elective affinity. The colon bacillus is to be regarded in most cases as a secondary invader, because it is found both by cultures and in sections either in decreasing numbers from the lumen outward, or is displaced entirely by streptococci. Experimentally, it appears to be almost impossible to produce appendicitis by intravenous injection of colon bacilli without injuring the mucous membrane."

NEW MEMBERS.

Grazer, Fred'k A., Sacramento, Cal.
Hale, Nathan George, Sacramento.
Rice, A. Le Roy, San Diego.
Sandal, L. B., San Diego.
Bartholemew, J. N., Santa Ana.
Jones, E. L., Huntington Beach, Cal.
Ransom, D. H., Madera.
Couey, E. J., Fresno.
Morris, J. K., Belmont, Cal.
Harvey, C. W., Anaheim.
Dillon, G. Parker, Sacramento.
Wegefarth, Paul, San Diego.
Bailey, Chas. H., San Francisco.
Wier, Thos. F., San Diego.
Cummings, Jesse Carl, Sacramento, Cal.
Sanders, Audley, Lemoore, Cal.
Allen, John, Raymond, Cal.
Thomas, F. W., Claremont, Cal.
McKillop, J. Edwin, Huntington Beach, Cal.
Bishop, F. W., Los Angeles.
Rinkenberger, F. W., Los Angeles.
Stadtmuller, Ellen S., San Francisco.

DEAD.

Meharry, J. S., Los Angeles.
Smiley, Walter Carl, Beaumont, Cal. (Died in Pasadena, Cal.)
Robinson, Frank Neal, Monrovia.
Troxell, F. P., Chino, Cal.
Newman, De Witt Clinton (died in Spokane, Wash.).
Hale, George V., Los Angeles.
Eldridge, John R., Berkeley.
Himmelsbach, Wm., Watsonville, Cal.
Rosenthal, Charles H., San Francisco.
Johnstone, E. R., Morro, Cal.
Wheeler, Jessie (died in Salinas, Kansas).
Oakley, Hewlitt Whitty, Porterville, Cal.
Marshall, Ben (died in New Jersey).

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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VOL. XIII AUGUST, 1915 No. 8

EDITORIAL NOTES

CALIFORNIA AND THE A. M. A.

Probably nearly fifty per cent. of the members of our State Society attended the sessions of the American Medical Association held in San Francisco in June. Up to the time of closing the registration on Wednesday night, for publication in the last Bulletin which was issued Thursday, 1064 of our members had registered. A good many registered on Thursday though the exact count could not be obtained on account of the hurry and pressure of closing things up. That is a mighty good showing, as we think you will admit. Also, it goes to show the wisdom of cutting out the annual meeting of the State Society, which would have been held in April, and encouraging our members to come to the more important meeting of the A. M. A. in June. The actual figures are not at hand, but it is very doubtful that any state in which the Association has met can show a registration of its home members running anywhere near the percentage in attendance at the San Francisco meeting. To all the members of the Committee of Arrangements, we owe our thanks; Herbert C. Moffitt, Emmett Rixford, Sol. Hyman, William P. Lucas, J. Henry Barbat, George Somers and O. D. Hamlin all did splendid work, but if any single one might be particularly complimented, it would be the Secretary of the Committee, Sol. Hyman. It is a bit unjust, however, to thank only these few, for the sub-committees all did splendid work and no one who was called upon to help, failed to do his part most admirably. The entertainments were all enjoyed to the maximum of their several capacities and over two thousand people stayed over Friday in order to take the various trips which had been arranged. One wandering about and listening, heard very few kicks—fewer than could have been expected or than is usually the case. The total registration was something over 2300; at least 500 more than was estimated the week before the meeting, and a number which compares very favorably with registration in most of the eastern places of meeting. The women of the California Building are to be especially thanked for their generous and bountiful assistance in the matter of entertaining the visiting ladies and in cooperating with the male hosts of the California Building in arranging the President's reception. Altogether, California lost nothing of its reputation for hospitality and for its ability to handle a large number of people smoothly and well and to ensure their comfort and happiness. The committee collected $4633 and has approximately $1500 left over.

REMEMBER YOUR FRIENDS.

There was a time, not so many years ago, when no respectable publication would refer to its advertisements or its advertisers. To be sure, many items boosting advertised things appeared in some periodicals — mostly medical (?) journals — but these were what is known as of the "reading notice" variety; carefully prepared by the advertiser and furnished to the publication; they were run as part of the advertising obligation. Now, however, and largely through the influence of your own JOURNAL, all that has changed; we are proud of our advertisers and our advertising. Nothing goes into the advertising pages that is not as carefully scrutinized as the matter that goes into the reading pages. A considerable amount of advertising is refused each year because the JOURNAL cannot vouch for the statements or the standing of the would-be advertiser, or for several other reasons. There is no reason, now, why any advertiser should not be referred to or anything advertised should not be mentioned in any part of the JOURNAL. And please remember that these advertisers are your friends; they very materially help out the business of the Society by so liberally patronizing the advertising pages of your JOURNAL. They offer, for your consideration, a constantly

changing variety of things that it would pay you to take an interest in; there is always something new coming along, and it will be well worth your while to see, from month to month, what new things are set forth in the advertising pages. You can save money, you can learn a lot that will be of benefit to you, and not infrequently you can secure samples or catalogues or premiums that are of real value. Also, just remember that there is no "bunk" about anything we advertise; if you are not entirely satisfied with your transactions with any advertiser, the JOURNAL stands ready to straighten out the matter. The new things in this issue are too numerous to mention right here, but just look them up and see for yourself; if you have not looked through the advertising pages for a couple of months, it will surprise and please you to see the number and variety of new things and new suggestions set forth. The statements made and the information contained in our advertisements may be absolutely relied upon. Help your friends and those who help you. Read the advertisements in this issue.

PROGRESS OR RETROGRESSION?

The new way of spelling "progress" and "reform" seems to be "politics" and "retrogression." Cheap politics mixed into medicine makes a pitiful mess, and especially when it comes to public health matters; for the people understand the importance of, to them little things, so not at all! Two glaring instances of almost criminal disregard for good public health effort and almost complete reversal of form—downward—have recently come to our attention. Real reform would be too much of a blessing for mere mortals ever to have; only in the fair land of Utopia, probably, does reform mean what it says. Here it means only a change of political manipulation and control. In Sacramento, Dr. Williamson was appointed a full-time health officer because of fitness; and he displayed that fitness by reducing the scandalous prevalence of typhoid fever in Sacramento. Due to his efforts, the typhoid morbidity rate was materially lowered. But that was too good for Sacramento. It was suddenly discovered that a mistake had been made; that the health officer should be a "local man"! Petty politics; a place; a job; some votes for someone; a "local man" means patronage and nothing but patronage. And the people of Sacramento will doubtless pay the bill with a few lives; but somebody gets some votes. Oakland is another tearful example of "reform" spelt "retrogression." After going through the throes of an examining commission, the working over of many applicants for the position of health director and the final appointment of Dr. Gillihan as such director after a competitive examination, comes a "reform" wave that changes the political complexion and the abolishing of the position of "health director" (and Gillihan) to make place for a "health officer"—to make jobs for the "push." Everything seems to be a "local issue," from the practical politician's point of view. San Francisco is a big city but it does surprisingly small and asinine things. It holds examinations for high grade technical positions, like that of health officer, etc., and confines the entries to "local men"! What has ability and what has efficiency to do with place of birth or residence? Is it better for all the people to have an incompetent health officer who resides—and votes—in the Nth ward, or to have a trained health official who comes from Milpitas or some other place? Universities all over the country are establishing schools in public health with the object of turning out properly educated and trained health officers. But what is the use of this praiseworthy effort if the health officers who do good work are to be treated as Williamson and Gillihan have been treated? These men have done splendid work and against odds; and now they are severally thanked for their effort in the public welfare by being thrown out by a bunch of practical politicians! If we, as physicians, did not know that the people pay the bill of petty, practical politics with their lives, it would be to laugh; as it is, it is enough to make a thoughtful citizen almost angry enough to commit a few murders—of "practical politicians." What is the use of a civil service system with technical appointments based on determined efficiency, when an Oakland will, the first trick out of the box, upset the whole thing and return to the "spoils system"? If this sort of thing is "reform," by all the Gods let us have something, anything, else!

PUBLIC HEALTH DAY.

When the plans for the Public Health Commemoration Day, Wednesday, June 23rd, were being formulated, some anxiety was felt that but few would attend the lectures and demonstrations and that the effort might prove a failure in that regard. The result, however, was remarkable. Of course it is impossible to say how many people attended these lectures and demonstrations and inspected the exhibits, but a conservative guess would be 15,000. All day long the huge Auditorium was crowded with quiet, inquisitive, interested laymen. The lecture rooms were filled to overflowing and other rooms and other speakers had to address the people who came to learn. Never an hour during the day but groups of people could be found gathered about the exhibits, thoughtfully studying them or listening to the demonstrations. It was an object lesson in the interest of the public in health matters and one worthy of careful consideration. We respectfully make the suggestion that the Association carry on the plan and make it a permanent feature of the annual meetings, in so far as possible; just as the Sunday talks in the local churches has become a regular feature of the annual meetings. Either Monday or Friday might be well used for this purpose. No one who saw the crowds in the Auditorium that Wednesday, could fail to be impressed with the sight—and its significance. The JOURNAL makes the suggestion for what it is worth.

DO NOT PRINT YOUR LICENSE NUMBER.

While, so far as we know at the time of writing, no rule on the point has been made by the Internal Revenue people, it is announced as being undesirable that physicians print on their prescription blanks the number of the federal license issued under the Harrison law. Blanks with the number printed on, might easily be stolen and a name forged and the prescription taken to some drug store where the signature of the physician is unknown. In all probability, if many physicians do have their number printed on the blanks, a rule will be made to stop it, and so it is just as well not to do what we are advised would be objectionable. The law is a good law and it is working out well and smoothly; we should do everything in our power to help in the administration of a measure that will do more than we ever could to prevent the refilling of dangerous prescriptions and the unlawful sale of what we know better than any other class to be the most dangerous and destructive of drugs. It is not the letter nor the spirit of the law nor the purpose of its administration to hamper, in any way, any physician in the regular and legitimate practice of his profession; it is merely intended to stop the commercialization of drug vice.

HEALTHY GROWTH IN CALIFORNIA.

Every three years, according to the by-laws, the House of Delegates of the A. M. A. appoints a committee on reapportionment, which committee goes over the membership returns of the several state associations and determines the number of delegates which each state shall have for the next succeeding three years. This was the year of reapportionment and the report of the committee made but two changes; California was given one more delegate, so for the next three years we shall have four delegates and not three, as previously. This is indeed a pleasant thing to record, for the effort to strictly scrutinize all applicants for membership in our county units as so strongly recommended by the House of Delegates of the State Society at its last meeting, is being distinctly felt. During the month of June three applicants whose names were sent in to be investigated, were refused membership for good and sufficient reasons. Again let the recommendation be urged, that no county unit elect an applicant to membership until after his name has been sent to the office of the State Society for a report. Unfortunately, all our county units have not adopted this procedure as a routine and so occasionally it is necessary to enroll the name of some person who would never have been elected had the members of the county unit been in possession of the facts in the applicant's history. We have for years been compiling this information, but it is held strictly private; it is never given out except in proper circumstances and to authorized individuals; it is never permitted to be used merely for the purpose of "knocking" anyone.

NARCOTIC DRUGS IN HOSPITAL USE.

The following correspondence with the Acting Commissioner of Internal Revenue clears up a point on which there has been a good deal of discussion and inquiry; that is, how the Harrison law applies to the use of narcotics ordered by the attendant physician for a patient in a hospital:

DR. JAMES H. PARKINSON,
1005 K Street.
May 11th, 1915.

Hon David A. Gates, Acting Commissioner of Internal Revenue, Washington, D. C.

My Dear Sir—My attention was called, to-day, to a ruling of yours in relation to records in hospitals. Enclosed sheet, which is copied from the Uniontown, Pennsylvania, Hospital, has, I believe, met with your approval. I fully realize the difficulties of putting the law into operation and, as far as I can see, the greatest difficulties will arise in connection with hospital administration. I should like a ruling on the following points:

1. Given a case in hospital in which it is necessary to administer sedatives, once or twice or as may be required, directions for same to be entered on the chart. What is the most simple procedure that will be permitted under the law? For your guidance I enclose a chart with the form that I have always followed. Is this permissible? If not, what will be necessary to make it conform with the law?

2. Is the usual business signature of a physician sufficient or must he, as appears to be required, write his name in full?

3. In a case in private practice where a nurse is in charge and where it is necessary to give sedatives hypodermically, I have ordered the hypodermic tube as a prescription and have written the usual directions. These have been modified verbally to the nurse or noted on the chart, according to circumstances. Is this sufficient?

These rulings will be furnished to the local Society and published in the JOURNAL of the State Society, of which I am Councilor for this district.

Respectfully,
(Signed) JAMES H. PARKINSON.

TREASURY DEPARTMENT, WASHINGTON.

Office of Commissioner of Internal Revenue.

In replying refer to
M-n 0614.
Narcotic Laws. May 26, 1915.

Dr. James H. Parkinson, 1005 K Street, Sacramento, Cal.

Sir—Replying to your letter of May 11th, enclosing a form of record of narcotic drugs you desire to make use of in the Mater Misericordiæ Hospital, at Sacramento, Cal., you are advised that this form, provided the total amount of narcotic drug administered to each patient is indicated thereon at the time the patient is discharged and before filing with the pharmacist or other person in charge of the duplicate order forms, meets the approval of this office.

The initials or signature of the physician under whose direction the narcotic drugs are administered

should appear on each of these sheets.

What the Government desires is a record of the kind and quantity of narcotic drugs administered to each patient in such institutions as will balance with the record of drugs received as indicated by the duplicate order forms on file.

Respectfully,
(Signed) G. E. FLETCHER,
Deputy Commissioner.

MATER MISERICORDIAE HOSPITAL.
Nurse's Clinical Record.

Dr. James H. Parkinson. No. 1.
Patient, Mr. X. Room 17. Date, May 12, 1915.

If in pain give 1/16 M. Sulph. per hypo and repeat in 4 hours if necessary. J. H. P.

Give M. Sulph. 1/24 to 1/16 when necessary to relieve pain. J. H. P.

Give ¼ gr. M. Sulph. per hypo. If this does not seem to relieve, repeat in one hour. Nothing further without orders. J. H. P.

Prepare patient for operation (appendix) 10 a. m. tomorrow. Usual hospital operative preparation. J. H. P.

This last ("usual hospital operative preparation") will include a hypodermic of quarter grain, Morph. Sulph. at 9:30 a. m.

DR. RODMAN AND "THE COLLEGE."

Why Dr. Rodman should have dragged into his presidential address some laudatory remarks about the American College of Surgeons is a mystery, but it is none the less a fact that has excited a good deal of adverse comment. It does not matter what the college is or what it stands for or what it has done or what it is going to do or what it thinks it is going to do; it has nothing to do with the American Medical Association in any way whatsoever. This college of surgeons is a purely voluntary, proprietary organization of men who brought themselves together for stated purposes; they may or they may not attain those purposes; but that too has nothing to do with the case. It seems clearly out of place to announce an intention of discussing the work of the American Medical Association and then proceed to talk about an organization which has nothing to do with the Association. And the criticism of this proceeding was not confined to outsiders; not a few members of the college itself were very free in their words of adverse comment.

THE MEDICAL PERIOD.

The period from June 14 to 28 was set aside by the Exposition people as a sort of general medical period and a very considerable number of medical and kindred organizations met in San Francisco at that time. In addition to the American Medical Association, there was the important meeting of the Pan-American Medical Congress which was called on the invitation of the President of the United States as authorized by act of Congress of March 3, 1915. The Congress is officially composed of representatives from the following countries: The Argentine Republic, Bolivia, Brazil, Canada, Colombia, Cuba, Chile, Costa Rica, El Salvador, Ecuador, Guatemala, Honduras, Haiti, Hawaii, Mexico, Martinique, Nicaragua, Panama, Paraguay, Peru, Santo Domingo, United States, Uruguay, Venezuela, British Guiana, Dutch Guiana, French Guiana, Jamaica, Barbadoes, St. Thomas and St. Vincent.

Non-affiliated societies convening also in connection with the Panama-Pacific Exposition were the Pacific Coast Oto-Ophthalmological Society, June 14 to 16; American Society of Tropical Medicine, June 14 to 16; American Association Medical Milk Commissions, June 17 to 19; American Climatological and Clinical Association, June 18 and 19; American College of Surgeons, June 21; American School Hygiene Association, June 25 and 26; American Association of Medical Examiners, June 21; American Therapeutic Society, June 21 and 22; American Proctologic Society, June 21 and 22; American Hospital Association, June 21 to 25; Medical Association of the Isthmian Canal Zone, June 23 and 24; Pacific Association of Railway Surgeons, June 25; American Academy of Medicine, June 25 to 28; June 20 to 27, the Nurses' associations, consisting of The National League of Nursing Education, California State Nurses' Association, American Nurses' Association, and the National Organization for Public Health Nursing.

MERELY MONEY!

How ingeniously pathetic is the average business man! Money is the God of all Gods; the incoming of capital is to be rejoiced at regardless of its use or its origin or anything pertaining to it except the ring of the cold metal! The Law brothers are still respected citizens, directors of banks and Y. M. C. A.'s, unless there has been a change, and no business man with whom they associate seems to object to the fact that their large monies are about as clean as the small monies of the pimp, the panderer and the white-slaver. And now comes the "Monthly Bulletin of the California Development Board" announcing with the fatuously childish joy of a business man, the wonderfully gratifying fact that a factory is to be established in Los Angeles for the purpose of the local manufacture of—Coca Cola!!

GOOD LEGISLATORS—AND OTHERS.

It has reached the attention of the JOURNAL that some members of the last legislature who stood for better medical legislation have felt somewhat disturbed or annoyed because of our mild criticism of the net result of legislative effort. No single legislator who stood out for higher medical standards or for not reducing medical standards has any reason to feel hurt. Certainly the Society and all its members are grateful to all such for having done their duty by the people of the State of California. The contention of the JOURNAL was not that all knew better and did wrong, but that most of those who opposed high standards or who stood for reducing standards of medical efficiency for licensure, knew better. Nearly every

man who goes to the legislature is sufficiently intelligent to know that good and well trained doctors are better than quacks, freaks and half educated healers of various sorts. Those who are not, can very easily and with little effort, place themselves in full possession of the facts. If, then, they wish to be guided by facts and work for the good of the people, they may readily do so; if they wish to be actuated by a collection of freaks, quacks and persons who desire to destroy the people's protection because these elements are among their constituents, why that is a different matter. There is no good reason why we, as a profession and as an organized profession, should go to the legislature and beg for anything. *We* do not need protection, but the people do. If it is the wish and the will of certain legislators to remove the protection which just medical laws and high standards for medical licensure give to the people of the state, the responsibility is up to them; they cannot avoid it; they cannot plead ignorance, for enlightenment, if they need it, will come with the request for it. But we firmly believe that most of those who vote to lower standards and to allow any old sort of freak to treat the sick or injured citizens of California, do so with their eyes open and to placate some of their constituents at the cost of the welfare of the whole people. Merely as citizens who understand, we extend our thanks to every member of the last legislature who worked or voted for proper medical standards, no matter what the result. It is difficult to see how anyone who stood right, worked right and voted right in the matter of medical legislation, could take offense at anything which this JOURNAL has ever published. But if there should be any such, to him or to them the JOURNAL expresses its sorrow that such offense should have been taken where none was intended.

VANDERBURGH AND THE "HOG-TIGHT FENCE."

An interesting letter has been received from W. W. Vanderburgh, D. O., an Osteopathic member of the State Board of Medical Examiners, which we take pleasure in publishing herewith. Upon the receipt of the letter, we wrote to the secretary of the board asking for the portion of the minutes giving the action referred to by Vanderburgh as having removed a section of the "hog-tight fence," by which expression he probably means the medical practice act. The expression is a good one, as we shall presently see. The secretary of the board said in reply that he could not tell from Vanderburgh's letter what particular action of the board was meant. Are we to assume from this that the board has taken a number of sections from the "hog-tight fence"? So many that it is not possible to say to which one Vanderburgh refers? One can hardly believe that this is the case for it is known that many of the board are doing their best to preserve as much of the efficiency of the protective law as they possibly can. For some years the medical practice act was indeed a "hog-tight fence"; it kept out most of the hungry and heartless hogs who would so much have liked to get inside the state and take away the money and the lives of our citizens. The "hogs" of the various cults and "schools" and "drugless" and otherwise healers; the "hogs" of the diploma mills; the "hogs" who professed to want to do nothing but manipulate with a special God-given knowledge that did not need medical or anatomical training for its beneficent manipulations; the "hogs" who know so well how easy it is to get money from sick, and especially hopelessly sick, humanity. These, all and several, the "hog-tight fence" of the medical practice act kept from preying upon our people. It was a good and strong and securely protective fence against these "hogs" of ignorance and greed and graft and money-lust, and we are glad to see that Vanderburgh recognized it as a "hog-tight fence" and that it really did keep out these "hogs" of various sorts. But why his thinly veiled joy at helping, as a member of the board, in taking out a whole section of this "hog-tight fence" of protection? How have the innocent and unknowing people of California offended Vanderburgh so that he rejoices at his part in removing some of their protection against the "hogs"? Have they offended Vanderburgh, as the people of Israel offended the Lord, and so must have this pest of "hogs" turned loose upon them? Can it be that Vanderburgh is acting as a member of a board whose duty it is to protect the people and at the same time helping to destroy the people's protection and let in this horde of hungry "hogs"? The situation seems to be preposterously anomalous; and yet, there—or here—is his letter, in word and in tone implying that he has helped to take out a section of the protective "hog-tight fence" and rejoicing, apparently, in the letting in of more of these "hogs" for the spoliation of the unhappily sick, trusting, credulous people of California!

San Francisco, Cal., June 24, 1915.

Editor California State Journal of Medicine,
San Francisco, California.

Dear Doctor—In a recent issue of your JOURNAL you commented upon my affidavit which I made with reference to propositions submitted to me by Dr. Alderson at the time that he was chairman of the College Investigation Committee of the State Board of Medical Examiners. You virtually stated that my affidavit was false.

You state that Roosevelt would use a shorter and uglier word if commenting upon my affidavit. Assemblyman Gebhardt, chairman of the committee, after hearing both sides of this argument, did use the shorter and uglier word but he applied it to the other party at issue. Gebhardt explained that notwithstanding his belief in my statements, he would vote against us as he believed that "the tail was trying to wag the dog."

You say that when the smoke has cleared away the "protective fence" built up around California by the medical profession will probably be "shot full of holes." The Board of Medical Examiners, at its meeting held in San Francisco last week, by

a vote of seven to two removed a panel from this previously hog-tight fence.

This action of the Board, taken upon a report submitted by a committee which was appointed by Dr. Alderson, is sufficient refutation of the previous report written by Dr. Alderson to thoroughly satisfy us.

The statements made in my affidavit were true in every detail. In view of the facts in the case you are requested to correct the impression that you endeavored to create in the editorial referred to.

Very truly yours,

W. W. VANDERBURGH.

SOME TYPICAL EXPERIENCES WITH SYPHILITIC PATIENTS.*

By VICTOR G. VECKI, M.D., San Francisco.

The histories of the cases selected each represents a group of cases treated in a different way.

There is no doubt that every single case of syphilis ought to be treated in the best way there is, or in my estimation treated about as well as cases six, seven and eight, related in the present report. Unfortunately, and as every syphilologist knows only too well, there are many conditions which prevent physician and patient from carrying out the best and ideal treatment in many a case.

Every person of any intelligence when told to be afflicted with syphilis declares at once the intention to do all possible to fight the evil, nothing would be too much, etc. But most of them relent in their zeal so soon as they see themselves free from any symptoms, and think themselves in perfect health.

Case 1. The employee of a brewery, 34 years old, came under treatment in October 1906 before secondary symptoms appeared. He was given energetic treatment ten months long in the form of intramuscular injections of sublimate, and then stopped the visits to my office. Recently I met him on the street and asked him what he did for his syphilis since; he just laughed, asking me why should he do anything when he felt so well? And when I reminded him of my instructions, and how I told him when he had to return for treatment, he just smiled knowingly, telling me: "I know what you told me, I know that doctors want the people to be sick all the time, I know; but I am well; come let's have a drink." How could I insist further when he was so sure that I wanted him to return for treatment for my own benefit? I only hope he will not be compelled to resume treatment for a central nervous system involvement.

Case 2. A saloonkeeper's wife, age 36, was infected some time in April 1911, but presented herself for treatment June 30th of the same year, when secondary symptoms were well established, and she had been treated by another physician several weeks long for ptomain poisoning.

She was given intense intermittent and combined treatment, and had up to March 1913:

29 Intramuscular injections of sublimat.
10 Intramuscular injections of salicylate of mercury.
8 Intramuscular injections of calomel.
3 Intravenous injections of salvarsan; and was given for six weeks, potassium iodid.

The patient contracted an acute bronchitis about March 13th, 1913, and March 23d she developed meningeal and cerebral symptoms, partial oculomotorius paralysis, stupor, delirium, vomiting and stiffness of the neck. Conditions became worse and the patient was taken to the Mt. Zion Hospital. Four daily intramuscular injections of sublimat brought only slight improvement. April 6th she was given an intramuscular injection of 40% calomel and began to improve immediately. These injections were kept up intermittently until the middle of September, though the patient was able to leave the hospital April 10th. She had five injections in April, four in May and four in August and September.

Mild cerebral symptoms, however, persisted, and the Wassermann reaction, taken October 2d was strongly positive.

At that time I was urged by the manufacturers to use the Mer xx, or as it was also called the Twenty-Day Treatment.

After explaining to the patient all I knew of that new remedy she consented to try it and from October 4th to 17th took 14 daily doses, when severe symptoms of mercurialism developed, with frightfully deep ulcerations. For three weeks the patient was unable to eat, and several days could only swallow a few drops of liquid at a time. In spite of rectal-feeding she became a real skeleton-woman, and was several times near collapse, the exitus lethalis was momentarily expected.

Careful nursing and painstaking local applications saved the life and after three terrible weeks the patient began to improve rapidly. All symptoms of cerebral and dermal syphilis disappeared. By Christmas she weighed 30 lbs. more than November 5th and 10 lbs. more than before the time of infection with syphilis. Today she is still in perfect health, working hard, free from any symptoms and refusing any further treatment. Last Wassermann reaction made Feb. 17th, 1914, was weakly positive.

Case 3. Husband of case 2, 40 years of age, came under treatment September 6th, 1911, with early secondary symptoms. The following day he was given an intravenous injection of salvarsan. All symptoms disappeared inside of six days. The patient had no treatment whatever since, and though drinking hard at times, he remained in good health. Two blood examinations, he took in 1913, when the condition of his wife frightened him, were negative.

Cases 4 and 5. A broker 30 years of age infected his bride in 1904, after thought to have been cured by a few poorly performed inunctions of grey salve. I gave her before and up to our little earthquake and big fire a great number of intramuscular injections of sublimat. As the records were burned I can only estimate the number of injections, but as small patches in the mouth persistently reappeared she had at least 250 injections given daily for from 36 to 40 days, stopping for one to four weeks, when symptoms would reappear and help me to persuade the patient to continue treatment. She complained bitterly against the injustice of Heaven, as she termed it, that she should suffer so persistently, and her husband, who was the guilty one, was perfectly well after having taken only 48 injections, and being able to refuse further treatment, using the excuses of perfect health and always pressing business.

The tables are turned now, however. The yearly blood reactions taken for the last five years are always being negative for her and positive for him. She is free from any symptoms, while he suffers from ambliopia, and I am afraid is showing lately suspicious symptoms of a beginning paralysis. She was given no treatment since 1909, and he is compelled by symptoms to take desultory treatment from time to time. Five intravenous injections of neosalvarsan and 24 weekly injections of calomel were given to him since Feb. 9th, 1914, and he had to be dragged to every one of his treatments unless the symptoms were really alarm-

* Read before the Urological Section of the San Francisco County Medical Society, March 30, 1915.

ing. I am now trying to persuade him into intraspinal injections.

Case 6. An intelligent German workingman came June 27th, 1911, with a typical primary induration. He refused from the beginning to take the 606 on account of a prejudice and has not changed his mind since. Otherwise he was most faithful to the treatment. From June 27th to September 11th he was given 12 weekly intramuscular injections of hydrargyrum salicylicum, then from October 30th to December 26th, 8 weekly intramuscular injections of calomel. From Feb. 17th to April 15th, 1912, again 8 intramuscular injections of the salicylate, from September 2d to October 21st eight of calomel, from Jan. 6th to Feb. 24th, 1913, 8 of salicylate, from May 26th to July 14th again 8 of salicylate. July 28th, 1914, blood-reaction negative. Same result November 2d upon which I was tempted to think that mercury alone is superior to combined treatment, when unmistakable cutaneous symptoms appeared Feb. 8th, 1915, and promptly disappeared after the patient was given two intramuscular injections of Roger's 40% of grey oil. These injections are still being given once a week.

Case 7. A boy aged 18 from a good and wealthy family was infected in the spring of 1903. A friend of the family came with him to my office, and the boy was given the necessary instructions and energetic intermittent treatment by daily intramuscular injections of sublimate. The last active symptoms in the form of small mucous patches in the mouth appeared in Feb. 1907. The patient then began to forget his disease. August 31st, 1911, his blood was examined, as he wished to get married; the report was negative. He married, but decided to avoid the begetting of children. May 23d, 1913, he wished that his blood be examined again, as his wife was longing for a child. The report was again negative. In the fall, 1914, the wife gave birth to a strong and healthy child.

March 2d, 1915, the patient came again with mucous patches in the mouth, the blood was examined and found triple positive. An intravenous injection of neosalvarsan promptly made the patches disappear, but the injections are being continued once a week.

Case 8. Another scion of a good and wealthy family was also infected in 1903 and was treated by a very experienced physician by inunctions for three years, when he was turned over to me. The patient was fully informed in regard to the disease and demanded and obtained energetic and diligent, though always safe treatment, intermittently for five years more. March 22d, 1911, his blood was examined the first time and found negative. May 8th, 1912, blood proved slightly positive, and May 11th an intravenous injection of salvarsan was given. August 13th the blood showed Wassermann slightly positive, Noguchi negative. After having been given another intravenous injection of salvarsan the patient had to go abroad, and the blood was not examined until Jan. 20th, 1913, when it was found negative. September 18th, same year, blood again negative. But on account of the lessons learned the patient was given November 24th an intravenous injection of neosalvarsan. Blood examined again March 17th, 1914; the patient wished specimens to be sent to two different laboratories; both reported negative findings. Same result August 20th of same year, but in spite of that another intravenous injection of neosalvarsan was given.

Case 9. Feb. 9th I saw a fruit-dryer 42 years of age at Dr. Albert Abrams's office. He was sent there the day before by a physician from the northern part of the state with the information that he was being treated for over a year long by several physicians of prominence for nervous prostration from overwork, that several blood examinations were made, but Wassermann as well as Noguchi were always negative.

The patient presented various signs of progressive paralysis. The Argyll-Robertson was present in the right eye; there was pronounced dysarthria and exaggerated Romberg symptom so that patient was unable to stand for one single second with eyes closed. Extreme bodily weakness and emaciation. Height 6 feet 1½ inches, weight 130 lbs.

Feb. 10th the patient was given an intravenous injection of neosalvarsan, 25 minutes after 60 c.c. of blood were withdrawn, and Feb. 11th 20 c.c. of salvarsanized serum, carefully prepared by Dr. Dorn, were injected intraspinally.

The examination of the spinal fluid confirmed the electronic test, Noguchi and Wassermann both being positive.

Four days after the first intraspinal injection, the clinical symptoms began rapidly to disappear.

The treatment was repeated March 1st, 25 c.c. salvarsanized serum being injected on the 2nd and again March 11th, when on the 12th 30 c.c. were introduced.

Each treatment was followed by a slighter reaction than the preceding one, and as the patient improved in every respect, having gained 14½ lbs. in bodily weight, he was given on March 19th and 26th intravenous injections of neosalvarsan but no further spinal injections.

The patient, who before treatment was under constant care of a nurse, comes now to the office unaccompanied, and is well to every practical purpose.

The electronic reaction for progressive paralysis disappeared, the spinal fluid examined on March 12th was reported by Dr. Dorn: Wassermann negative, Noguchi only cloudy, not positive. Abrams's electronic general reaction for syphilis, however, persists, as usually.

There is no advantage in drawing any bombastic conclusions, but experience teaches again and again that I was surely right when I dared to affirm in April 1913 that: In order to be absolutely safe the syphilitic must be watched and eventually be treated the balance of his life. The patient and the physician must be aware of this fact.

Discussion.

Dr. Alfred B. Grosse: I have little to add to the subject matter of this paper and in the main naturally agree with most of the conclusions arrived at, but will point out a number of points that should not go unchallenged or at least without further illumination and discussion.

Dr. Vecki and I agree practically concerning treatment but whether I have been more fortunate or have had a better type of material, at any rate, my prognosis is far more optimistic as borne out by my results even in the pre-salvarsan days. It is, of course, essential to have full control of your patient so you will have him under observation for a long period of time, but a pessimistic prognosis as given by Dr. Vecki I'm afraid, will, in many instances, have the effect of causing syphilophobia or to make the patient indifferent to treatment on account of hopelessness. This point is a matter that is up to each medical man and most be handled according to the mental attitude of the individual patient. I have had very few reminders in my cases as I always was a disciple of the chronic intermittent treatment method, insisting on inunctions and grey oil injections.

Now as to the advisability of treating cases of lues dating back many years, at least 10, in which no symptoms have ever appeared but in which strongly positive Wassermann reaction was demonstrated, this being elucidated simply because patient had heard of the efficacy of blood test. I strongly lean in the direction of leaving well

enough alone, if spinal fluid is found negative to the various tests. These cases in spite of energetic treatment are hardly influenced in their positive reaction and as the subjects are no longer young, salvarsan and effective mercurialization are under these circumstances not indifferent methods. The hazard of treatment seems to me the greater of the two.

I would like to ask Dr. Vecki if his patients do not complain of great pain following his calomel injections. There is no question that this is the most efficacious mercurial salt. But my experience with the injection treatment of mercury has been that some patients could not stand it at all (young women) or complained bitterly and if possible evaded more treatment, so that I welcomed exceedingly the advent of a painless grey oil which has been satisfactory to all my patients for a period of nine years or more and has rendered unnecessary the very disagreeable inunctions.

In the cases where Hg is badly borne and where salvarsan has lost its effect and the patient is losing weight rapidly, 25% iodipin intramuscularly in doses of 20 c.c. daily until from one-half to one pound has been administered, will act magically and with a several pound increase in weight, will prepare the patient for Hg treatment which will now be satisfactorily borne.

Last but not least, we, who regard ourselves as specialists should endeavor to standardize our prognosis and our therapeutic demands at least to a certain degree. A syphilitic consulting a number of authorities gets as many different opinions. Ultimately the public will look with suspicion on this branch of the profession and we will be ourselves to blame if we lose the confidence of our patients and incidentally lose the chance to aid in the stamping out of this disease.

Dr. William E. Stevens: I was disappointed this evening in not hearing the important subject of intra-spinal treatment mentioned to any extent. This method is one upon which there is still much to be said. I have seen cases of syphilis of the nervous system which showed marked improvement following the intra-spinal injection of salvarsanized blood serum according to the Swift-Ellis technic while on the other hand very similar cases treated in the same manner have shown no improvement whatever. Faulty technic is without doubt responsible for many of the failures as well as for results disastrous to the patient. Two cases of death following this method of treatment were called to my attention today. In one only fifteen c.c. of spinal fluid were withdrawn whereas thirty-five c.c. of salvarsanized serum were injected. The patient died two hours later. Autopsy showed cerebral hemorrhage. In the other case a large quantity of air was injected into the spinal canal. The patient died two and a half hours later. No autopsy was obtained. Another error is in the use of a serum that has not been properly centrifugalized but remains more or less turbid. Lastly I consider it a mistake to introduce into the spinal canal a salvarsanized serum which has been prepared from the blood while the Wassermann is still positive and especially so in those frequent instances of syphilis of the nervous system where the Wassermann examination of the spinal fluid is negative. If these and other errors of technic were avoided the number of failures with the Swift-Ellis method would be much smaller.

Dr. H. J. Nichols, U. S. A.: I certainly have enjoyed this paper and the discussion because it brings out much of interest to a man working with syphilis. Some of us are more interested in the laboratory side and others in the patient. Sooner or later we must all get together on the subject.

Personally, I must say I feel that we cannot consider a patient cured who still has a positive Wassermann reaction. From the point of view of infectious disease, he is still infected with spirochetes. The history of paresis is very instructive on this point. In paresis we find a very strong reaction which we did not understand until spirochetes were found in the brain. Similarly spirochetes may be in the blood vessels and give no sign of disease. It would take a very clever diagnostician, I believe, to detect an early case of aortitis due to syphilis. Even healthy children are no proof of the cure of syphilis. A man may not have a localization of spirochetes in the testicle, but have them in the aorta.

I think a great many of us are coming to feel that without spinal puncture there is no way to be sure that a patient has not a beginning involvement of the nervous system. We aim to make spinal puncture in all of our cases of syphilis at the Letterman Hospital and are somewhat surprised to find so many suggestions of trouble. In early cases the cell count is often above normal and the other tests are on the border line. Of course that may not always mean a localization or direct infection of the nervous system, but it raises that point, and I do not believe we are going to be able to tell a patient that he is free now and can go ahead about his business, without having a spinal puncture. At a meeting here a month or two ago, someone objected to this measure, saying that it was a major operation and should not be done except under great provocation. But those of us who do much of this work feel that it is a minor affair and I think we ought to encourage the idea that spinal fluid examination should be done as a part of the routine treatment of syphilis. In regard to salvarsanized serum I feel that it has a distinct field of usefulness in tabes and cerebral syphilis. In paresis there is not much encouragement. But in many cases we should go to the seat of the trouble. Of course all sorts of errors are going to be made, but those things correct themselves in a year or two.

I think we ought to have some general professional attitude on syphilis, but I don't know how we are going to get it except under the laboratory point of view. I feel that we have the best of it and that the other side must come over to us a little more.

Dr. Louis Gross: Both Drs. Nichols and Craig have done a great deal of work in the United States Army, and feel proud of the work they have done in syphilis. It is really remarkable, if you read their reports, to see the wonderful work that they are doing. And I think that it will not be long before the army gives us a great deal of knowledge, especially on the subject of syphilis.

In regard to the case that Dr. Grosse mentioned, I cannot understand how any syphilographer can give a man permission to marry on a positive Wassermann. It is better to err on the safe side than on the unsafe. I do not feel that any physician has a right to give a man with triple positive permission to marry. I think Dr. McGowan of Los Angeles is right in refusing permission even though you do make syphilophobiacs of these patients.

In one case a young man who had been treated for chronic gonorrhea said to me on December 15th of last year, "Tomorrow I am going to ask a young lady to be my wife, I expect to marry in six months." I suggested to him the advisability of having a Wassermann test. He said, "Very well, but you know and I know that I haven't had syphilis." The result was triple positive from one laboratory. I rang up this laboratory and told them to make a re-examination, which they did. The result was triple positive! That was December 15th. On December 16th, I took blood and sent it to another laboratory and they gave me the report of negative. The next day I took two bloods and sent them to the first and second laboratories. One gave me Wassermann X and

Noguchi X and the other laboratory still insisted upon negative. I then proceeded within a few days to give a provocative Wassermann and examined the blood twenty-four hours afterward, and as I stated to you, I found twenty-four hours a little too early. The laboratory came back with a finding of negative. Six days later I sent it again to the same laboratory with the result of Wassermann XXX. This was a young man of twenty-four years of age. The father was dissatisfied and sent the boy to Dr. Alden. Dr. Alden in turn examined him. I have neglected to say that there were no symptoms. Dr. Alden sent him to Dr. Hogan, who not only examined the blood himself, but also sent a specimen to another laboratory. Dr. Hogan returned a report of Wassermann XXX. And the other laboratory gave Wassermann XX. So, gentlemen, I say this, it may be that we have not second-sight to see that these patients have clinical symptoms, but there is something in these patients when they give triple X. I feel that the time will come when we shall be more acute in the study of these cases. Some symptoms we cannot see or feel, yet I feel that it is absolutely wrong to give a man the right to marry when he has a Wassermann XXX. I may be wrong, but time has got to prove that I am wrong. It is far safer to make a mistake on that side than on the other side.

In reference to the doctor wanting to know if salvarsan in indicated in the practice of medicine? I consider salvarsan a wonderful remedy, and think the man who is not using salvarsan today is not doing justice to his patients.

Dr. Veeki: The claim that physicians are creating syphilophobiacs may be justified sometimes, but as far as I am concerned, I must plead not guilty, because I try to inspire my patients with all the hope there is; in fact, I make them understand that, while syphilis is a serious trouble I am positive that it is curable. And I really believe it is curable, though we never know when it is cured. We are today in the same position we were years ago before we had the Wassermann; all we can say to the patient is: "To all appearances you are cured, but we cannot be positive about it. You will have to be watched." And therefore I do not say a syphilitic must be treated all his life, but he must be watched; and I think it is better to watch a patient and eventually treat him than to allow him to go to meet with progressive paralysis or with tabes.

It is breaking into open doors when anyone emphasizes that clinical findings are beyond the laboratory: When we see syphilis we don't need a Wassermann, but when we don't see it and when we have any doubts in any respect, then we need that Wassermann very badly.

In regard to intra-spinal injections, Dr. Stevens mentioned that nothing was said about it. I reported one case. I am positive there is absolutely no danger either in withdrawing spinal fluid or in the properly made intra-spinal injection. Of course, you have to be sure of the mode of preparing your fluid, and you have to know how to inject it. Dr. Stevens mentioned also that it was a mistake to inject salvarsanized serum intra-spinally when the blood was positive. If blood and spinal fluid are negative, then there is surely no necessity of any injections. It is my personal experience, however, that there is no danger to give an intra-spinal injection with a salvarsanized serum prepared from a blood that gave a positive reaction. We must look for the danger in other directions. Dr. Grosse asked about the painfulness of calomel injections. In answer I will say: If you use a 40% calomel suspension, you give it in small doses, only one-quarter of a c.c.; and if you know what preparation you have, and use a special syringe for that purpose there is never much pain. Formerly, when we used a 10% suspension we had more pain, but it was never so that a man could not stand it easily. At that time I had a patient who was driving a milk wagon and he told me it was not an easy task, but he managed. I think when we really need calomel, we should give it, without regard to pain.

NOTES ON ANGINA PECTORIS.*

By DR. WILLIAM WATT KERR, San Francisco.

Angina pectoris, like ascites and dropsy, is a term used to designate a group of symptoms which probably are consequent upon a number of morbid changes reacting upon one another, but the exact inter-relationship of which we do not at present understand. Yet the group is one of such importance and severity that it requires special treatment, and consequently angina pectoris is most frequently mentioned as if it were a disease.

The term originally meant a sense of suffocation, strangulation, or constriction in the chest, but this condition is so frequently overshadowed by the most intense and agonizing pain that popularly the first signification is almost forgotten, and pain is the idea suggested to the mind when the words are spoken.

Additional difficulties have arisen from poor classification of the cases. The attempt to divide them into true and false angina is a mistake, because it does not matter whether the attack is found to be associated with organic changes, reflex or emotional nervous disturbance, or toxic conditions, the same subjective sensation is present in all of them; consequently, it is better to abandon the term "pseudo-angina," and regard all cases presenting these particular symptoms as different degrees of angina pectoris.

Angina pectoris is therefore a symptom of cardio-vascular disturbance, just as tachycardia is another indication of various disorders in the same system. Seeing that we know so little about the etiology of this malady, and that all we are certain of is the presence or absence of certain symptoms, it would seem that the only warrantable classification at the present time must be upon this basis, and hence the subject is frequently divided into painful and painless angina.

The painful variety is the more common, and the chief symptoms are pain in the region of the heart or sternum, which may radiate into the neck, jaws, arms (especially on the left side), as well as into the epigastrium and abdomen. With these is a feeling of constriction, or oppression over the chest. The pulse may show evidence of high tension or it may be unchanged; and occasionally there is bronchial spasm, as demonstrated by asthmatic wheezing.

In severe cases the face is pallid and covered with sweat; there may be a sensation of impending death, and sometimes the patient loses consciousness. The attack may come on when the patient is at rest, but more frequently it occurs in consequence of exertion, emotion, excitement, or when

* Read before the San Francisco County Medical Society, November 3, 1914.

the stomach is distended. The paroxysm may last for only a few seconds, or it may be two or three minutes, but after it does pass away a feeling of soreness and sensitiveness over the chest may persist for three or four days, and slight exertion or excitement induce short, mild attacks.

MacKenzie has called attention to the fact that areas of cutaneous hyperesthesia on the chest and arms are frequently discovered in patients who are the subjects of angina attacks, and ascribes them to the development of irritable foci in the cord as the result of frequent stimulation.

I have a patient who has suffered from this disease for nearly five years, and it is only by taking life very deliberately that he can avoid daily distress. During attacks the pain radiates to the inner side of the upper left arm, and even in the intervals this area is always more sensitive than that corresponding on the right side; but the most interesting feature is that occasionally this brachial pain exists in a mild form for several days, and the patient has noticed that the distress in the chest is more readily induced by exertion at such times, so that now he regards it as an epileptic would an "aura," and resorts to low diet and purgatives until the pain in the arm disappears. In this way the frequency of his attacks have very much diminished, and he can exercise more freely than formerly. It may be of interest to know that this gentleman has an aortic lesion, a few granular casts in his urine, and that his usual systolic pressure is between 170 and 180.

It is only natural that there should have been much discussion as to the cause of the symptoms in angina pectoris, because not only are the morbid anatomical changes inconstant, but the same changes are found in patients who never suffer from angina; and then the radiation of the pain from the chest to a more remote part, or the fact that the pain may originate in some remote part such as the wrist, remain limited to that area, or extend up the arm and to the chest, all tend to complicate the question. None of the explanations are above criticism, and it is possible that the same does not apply to every case.

The following are among the more important: Allbutt maintains that stretching of the root of the aorta is the cause of the pain, but this would not explain cases where the aorta is healthy, and also why the pain radiates only to the left arm; another belief is that the pain is associated either with disease or spasm of the coronary arteries, so that an ischemia of the myocardium is easily induced, the pain being the result of the anemia in the sensory nerve endings which are distributed along the walls of the blood vessels; another opinion is that spasm of the myocardium takes place like cramp in the muscles of the leg, and by severe pressure on the nerve endings makes them anemic and produces pain; again, that it is strain upon the left ventricle that irritates sensory cardiac nerves.

MacKenzie, on the other hand, believes that it is due to embarrassment of the contractility of the heart muscle, and that the pain is not felt in the heart, but in the chest wall, limbs, or other parts of the body that receive their nerve supply from the segment of the cord containing the sensory centers that have been stimulated by an abnormal afferent impulse from the heart, arriving in the cord through the sympathetic, and on account of its increased intensity, or other abnormal quality, being diffused to adjacent nerve centers. MacKenzie's theory is based on the fact that the heart, like other viscera, such as the intestines, does not appear to be sensitive to ordinary painful stimuli, such as pricking, cutting, etc.

In the following way he explains how pain may result from morbid changes in the cardiac muscle, although that viscus is not sensitive to ordinary pain stimuli: "In the normal process of life a stream of energy from the viscera is continually passing by the afferent nerves to the spinal cord and continually playing upon the efferent nerves that run to muscles, blood vessels and so forth. These processes are conducted so that they give rise to no appreciable sensation. If, however, a *morbid process* in a viscus gives rise to an increased stimulation of the nerves passing from the viscus to the spinal cord, this stimulation affects neighboring centers. If it excites a sensory nerve the resulting sensation will be referred by the brain, not to the viscus, but to the peripheral distribution of the sensory nerve." ("Diseases of the Heart," p. 59.)

This constitutes a viscero-sensory reflex, and a similar stimulation of motor nerves will cause muscular contraction or a viscero-motor reflex. When, therefore, angina pectoris is due to diseased myocardium, the pain is felt not in the heart itself, but in the chest wall and arms, because the afferent nerves from the heart enter the cord at the same segment as the sensory nerves from the painful areas in the trunk and arms. MacKenzie therefore claims that all that is necessary for the production of an attack of angina pectoris is strain thrown upon the left ventricle greater than its muscle can easily and efficiently overcome, "whether a fairly strong muscle struggles against an increased resistance, or where a weak or degenerated muscle has opposed to its contraction a normal or even a lowered pressure, but a pressure greater than the weakened muscle can readily overcome. To this there is probably added an excessive susceptibility of the nervous system." (MacKenzie, "Diseases of the Heart," p. 72.)

The sensation of embarrassed contractility passes to the cord and there diffuses to adjacent sensory nerves, so that pain is experienced in their somatic distribution.

There has been some difficulty in accepting this view universally because in a very large proportion of cases the heart acts forcibly, and there is no indication of weakness or failure of contractility. We should remember that in atheroma of the coronary arteries, and other conditions that are liable to injure the heart muscle, the tissue changes are irregularly distributed throughout the myocardium both in regard to degree and extent, and consequently the embarrassment of contractility may take the form of incoordination of the contraction of the individual muscle fibres with or without weakness of the total force of ventricular systole. This

incoordination is more liable to be developed under strain, and by analogy we might expect it to give rise to pain such as is caused by irregular contractions of the intestines and uterus. Angina pectoris might therefore be described as an incoordination of contractility rather than an exhaustion of contractility, for it not infrequently happens that as the heart grows weaker the attacks diminish both in frequency and intensity.

The existence of vasomotor nerves on the coronary arteries is extremely doubtful, and consequently the value of the suggestion that the pain is due to spasm of these vessels suffers correspondingly.

While MacKenzie's theory has many physiological and clinical facts in its support, and explains some very difficult problems in relation to angina pain, it is not yet generally accepted, because there is evidence to warrant the belief that the nerve filaments on the vascular walls are capable of conveying painful sensation. The pain that is experienced when an artery is pinched in the forceps, the tenderness that is manifested when pressure is made over the aorta, carotids or peripheral vessels when they are the seat of inflammatory processes, all indicate that they are sensitive to ordinary painful stimuli, and therefore there is warrant for the belief that the pain of angina pectoris in some cases may originate in the aorta or arteries.

Those who believe that the heart has pain sensory nerves which may require some special stimulus, adopt the view that the splanchnic sensory nerves are less sensitive than the somatic sensory, that diffusion of afferent impulse from the former to the latter takes place, and, as the function of sensation is developed very highly in the skin, consciousness refers the sensation to the peripheral cutaneous distribution of nerve fibers entering the same spinal segment as do those fibers from that portion of the heart, aorta or coronary vessels that happens to be irritated.

The radiation of pain is also explained by the statement that blood vessels are demonstrated to be sensitive; there is no reason why the painful sensations should not be conveyed along the sympathetic fibers covering the blood vessels, and that the localized pain, such as is found in the wrist and other areas, may be the result of spasm of the arterioles producing local ischaemia and secondary nutritive changes in the muscles and nerves.

Recently, Verdun expressed the opinion that contraction of arterial muscle is the cause of the pain. He argues that the viscera are insensible to any ordinary form of painful stimulation, that spasmodic contraction of muscular fiber in the intestine and uterus is associated with severe pain, and while we are fully aware of many stimuli that induce muscular contraction, we are, on the other hand, absolutely ignorant of any agent that will produce pain without at the same time producing muscular contraction, and therefore suggests that the pain-producing stimulus is the product of the muscle spasm. He further adds: "The painful stimulus generated through the contraction of involuntary muscular fiber is a special stimulus *sui generis,* and as such must be the product of biochemical action."

His application of this theory to the pain of angina pectoris is that in the heart or arterial walls or nerves regulating the contraction of these fibers there is some predisposing cause not always known, it may be degeneracy or it may be toxic, so that the muscle fiber responds by spasm to an ordinary contractile stimulus, or the nervous impulse may be excessive and produce spasm instead of the usual contraction, and as a result of this spasm a biochemical stimulus is produced which has the power of inducing pain in the region affected.

There are other theories, but they are all based more or less on the same lines as those described. None of them are beyond criticism, and the proper value of each can only be determined when our knowledge of physiology and pathological chemistry is much greater than it is at present.

Constriction.—This sensation is due either to inhibition of respiratory movement or to spasm of the intercostal muscles. MacKenzie believes that it is due to spasm of the intercostals, as a result of viscero-motor reflex action from diffusion of visceral impulse to motor cells similar to that viscero-sensory reflex. Not infrequently the sense of suffocation is without doubt due to an inhibition of respiratory movements on account of a dread that they may increase the pain, because the patient may sometimes be coaxed into taking a full inspiration and derives benefit from so doing; but this is by no means universal, as is evidenced by the fact that the feeling of constriction may be present when pain is absent.

Relation of attacks to meals.—It is a well-known fact that attacks of angina are more easily induced if the patient exercises soon after eating, or takes a hearty meal before going to sleep. MacKenzie suggests "that in some instances where angina pain is readily induced when the patient exercises soon after eating, the attack may be due to a digestive dilatation of the splanchnic area, together with a simultaneous dilatation of the somatic area as a result of exercise, so that the coronary arteries are imperfectly filled and the cardiac muscle exhausted under even moderate exercise." ("Diseases of the Heart," p. 99.) This theory may explain some cases, but it assumes the persistence of normal vasomotor reactions in pathological conditions of the cardio-vascular system.

During normal digestion there is a dilatation both of the systemic and splanchnic vessels, but especially of the latter, and this would lead to a natural fall in aortic pressure with diminution in blood flow to the different organs were it not "compensated by an increased output of blood from the heart. Observations show that after full meals there is a marked increase in the pulse pressure, indicating a more forcible beat of the heart. So far as the heart is concerned, the result of a meal is similar to that of muscular exercise." (Howell's "Physiology," p. 497.)

Such is the dictum of physiologists regarding the effect of food upon the heart's work; briefly stated, it says that the ingestion of food means increased heart's work, consequently exertion at such a time results in greater cardiac strain than when digestion has progressed to a more advanced stage.

In patients subject to angina pectoris the presence of arterio-sclerosis in some part of the body is the rule rather than the exception, and it must be remembered that after the aorta and coronary vessels the arteries of the splanchnic area are most liable to be involved in the degenerative process, also that the arterioles of sclerotic vessels are very prone to spasm. It is perfectly possible, therefore, that sclerosed vessels in the splanchnic area do not make a physiological response to the ingestion of food, but that some of them may dilate to a normal extent, others may be deficient in their expansion, while some of them may even be thrown into a state of spasmodic contraction, and yet the heart is stimulated by ingestion to increased exertion. Evidently, therefore, when an arterio-sclerotic man takes a hearty meal the strain upon his heart may be very much increased on account of pathological conditions in the splanchnic area, and if his coronary vessels are similarly affected it is not surprising that the myocardium should show itself unequal to the additional burden of exertion imposed upon it under such conditions.

The frequency with which attacks occur at night has always attracted attention, and various explanations have been offered; it is only to be expected that a seizure might follow the effort of undressing or the chilling of the body in a cold room, or the contact of cold sheets, but those that awake the patient from his sleep require some other explanation.

A short time ago I had a patient who experienced his first pain when he lay down to take a nap after lunch, and from that time on he suffered more or less pain every afternoon and night, until after five days he died in an attack that waked him from sleep about two o'clock in the morning. The bowels were thoroughly relieved by mercurials immediately after the first attack, he did not suffer at any time from indigestion, and twelve hours before his death he walked some blocks to the barber shop without suffering the least inconvenience.

Such cases can only partially be explained by the lowered state of the circulation during sleep and the diminished sensibility of the cerebral centers to afferent impulses that maintain the adjustment of the various automatic reflex processes going on in the body; because we cannot get away from the clinical fact that patients are more liable to attacks when in the horizontal position, and can often abort a seizure by sitting up. Probably interference with the amplitude of respiratory movement by pressure of the viscera against the diaphragm plays a very important part in the production of these attacks, and many chronic sufferers obtain relief by sitting up and taking five or six full inspirations at intervals of twenty or thirty seconds.

Full inspiration increases the negative pressure within the thorax, in consequence of which there is an increased flow of blood from all the veins opening into the right auricle, including the coronary sinus, and also a greater and more rapid flow of blood from the right to the left side of the heart since the capacity of the blood vessels in the lungs and the frequency of the heart beats are both increased during full inspiration. The importance of this to an exhausted heart muscle is at once evident, because relief of the right auricle and coronary veins together with a greater amount of blood flowing into the aorta means an improved coronary circulation and a corresponding improvement in the nutrition of the myocardium.

The patient should not be allowed to take the full inspirations too often or too closely together, as he is liable to become exhausted, and my own experience is that unless some improvement takes place after six or seven full inspirations at intervals of twenty seconds, the treatment should be abandoned. On the other hand, it is extremely gratifying to see a patient begin to nod his head in sleep within ten minutes of the first long inspiration. It should also be remembered that he should be taught to inspire slowly and deeply, instead of making a short, violent, inspiratory tug that is liable to increase the spasm.

In cases of pronounced arterio-sclerosis the increased frequency of the heart beat may be of distinct value, because the tendency of diminished elasticity of the arteries is to interfere with the continuity of the flow, producing high pressure during systole, with a marked fall during diastole; but this is compensated to some extent by more rapid heart action, so that a more constant flow through the capillaries and veins is maintained. And this applies equally to the coronary vessels, because, although blood enters them during each cardiac systole, it is also true that "the volume of blood flowing through the heart vessels increases with the frequency or the force of the beat, since each systole empties the coronary system more or less completely toward the venous side, and at each diastole the distended aorta quickly fills the empty vessels." (Howell's "Physiology," p. 550.)

There is only one other topic to which reference will be made at this time, and that is the indiscriminate use of nitrites in the treatment of angina pectoris. It would almost appear that many believe the only treatment for this disease to be the use of such vaso-dilators as amylnitrite, sodium nitrite, nitroglycerine and theobromine sodium salicylate; and the story is often told that these remedies used to relieve the patient, but that now they have lost their effect; and it must be the invariable story if the treatment goes no further than the administration of such remedies.

From what has been said in the earlier part of this paper it is evident that the majority of cases of angina pectoris can be attributed to a disturbance of the relation between the peripheral resistance and the driving power of the heart; the disproportion is not always on the same side, at one time the resistance is abnormally high, at another the heart is weak, and again, both may be at fault; so that one of the first questions to be decided in regard to treatment is, Which is the greater sinner, heart or vessels? Or are both equally culpable?

The mere fact that nitroglycerine relieves the painful seizure does not prove that its prolonged administration is the appropriate treatment, because it may be that, although the resistance at times taxes the powers of that individual heart, an abnor-

mally high pressure is absolutely necessary for the perfect performance of the body functions.

The disappearance of pain does not always mean that the patient is better; it may be that the strain is relieved by a further myocardial failure resulting in mitral incompetence, so the angina disappears, but the patient's condition is actually worse. Whenever the relief of the pain is followed by the appearance or increase of dyspnoea, it is almost certain that this apparent cure is really an increased muscular failure; and it is perfectly possible that the use of the nitrites may have contributed to this condition in the following way:

In all probability the coronary arteries are not supplied with vasomotor nerves, but the flow through them is regulated by variations in aortic pressure. This is a most excellent provision, because the higher the aortic pressure, the more work has the heart to accomplish, and consequently a greater amount of nutrition is required by the cardiac muscle. If, on the other hand, the coronary arteries were supplied with vasomotor fibers, and participated in general vaso-constriction, then the heart muscle would be subjected to extra strain at the very time that its blood supply was diminished.

When the coronary arteries are sclerosed a higher aortic pressure is necessary to maintain the circulation through the heart, and it is not infrequent that the reduction of systemic pressure is followed by the appearance of disagreeable symptoms. I have a patient with marked arteriosclerosis who suffers from vertigo and dyspnoea on the slightest exertion, even talking, whenever the systolic pressure is reduced to 164, and who always feels at his best when it is between 170 and 180; also a lady of extremely active habits who is uncomfortable when the systolic pressure is brought below 210; and I have no doubt that everyone has had similar experiences.

The fact is that nitrites never will *cure* angina; they should be used for the relief of the pain, just as morphine is given to allay pain in other parts of the body. Frequently it is necessary to combine digitalis or caffeine with the nitrites or theobromine, so that an increased driving power together with diminished resistance may be obtained; and it is better still in conjunction with these to adopt the prolonged administration of alteratives such as iodides, arsenic, colchicum or mercury that without doubt improve the nutrition of the heart muscle.

The selection of these remedies, the dose of each, the duration of treatment, and the question of the simultaneous use of cardiac stimulants and vasodilators must all be left to the judgment of the medical attendant upon the individual case; he alone knows the etiology, he alone can estimate the disturbed balance between heart muscle and arterial resistance, and therefore the decision must lie with him.

Discussion.

Dr. H. D'Arcy Power: Two points in regard to angina pectoris I would like to make a remark about. The first is in relation to the frequency of angina after meals. Amongst a variety of theories it is necessary to use our own judgment in making a selection. For my own part, I cannot help thinking that Dr. MacKenzie's theory answers in more cases than any other. In that case we are dealing largely with reflexes. We should look carefully to the splenic flexure of the colon. I have had personal experience of the importance of that viscus in relation to tachycardia. We frequently find angina pectoris and tachycardia in the same patient. In some of these patients it is dilatation of the splenic end of the colon that is the real cause of the reflex waves that give rise to these symptoms. I think that this can be demonstrated in many cases by careful massage and the displacement of gas from that area, with immediate relief. Anyone who has had experience with X-ray work in gastric disease will acknowledge that many cases, showing symptoms thought to be due to dilatation of the stomach, appeared on the plate as dilatations of the splenic flexure.

The second point is in connection with angina at night. We must look for some more general cause, a cause that will also account for the fact that from one to three in the morning is not only a frequent time for angina pectoris, but also for other diseases that are characterized by vascular spasm. It is a common time, for example, for epilepsy. If we are to look upon epilepsy as vascular spasm of certain regions in the brain, it comes into relation with angina pectoris. It is also a common time for the patient to wake up with asthma. In asthma you have a condition of muscle spasm. The same is true of migraine (possibly a localized edema secondary to vascular spasm and anemia) and of gout in the form of podagra. That brings up the question whether such attacks are not really due to toxic stimuli or the absorption of poisons, in some way dependent upon metabolic changes. We know that asthma, gout, epilepsy and angina pectoris are frequently associated in the same individual.

Dr. W. W. Kerr, closing discussion: There is not much discussion to close. We must not look for an explanation of all cases of angina pectoris in one particular cause. Even the pain to which Dr. Power referred after food cannot always be put down to this disturbance in the colon, because it will come on very frequently long before the food has entered the colon. You will find it very frequently after breakfast. If they take a very light breakfast and sit still for half an hour, they can then walk with much more ease than if they started right from the breakfast table to take a walk then. There is no doubt that cases of asthma and others are due to trouble in the colon, and you can have this form of peptic angina just in the same way as we have peptic asthma. That is why I rather think of angina pectoris only as a symptom instead of a disease. It is very unfortunate to regard it in any other way, because I think it clouds the interpretation of symptoms.

One other point is in regard to the prognosis. Unfortunately, an unfavorable prognosis is given in many of those cases of angina pectoris where the pain comes upon moderate exertion or very soon after food. You will find that is very common indeed in men from fifty-three or four years up to sixty. You will also find if you inquire about those patients, that a great number of them have been people of pretty full habits and at the same time people who have not changed their mode of living as the years came upon them. Possibly they have increased, instead of diminished, the amount of food they take. Without doubt, after forty we should gradually diminish the amount of food we take, whereas I think the usual custom is to be less inclined to take exercise, perhaps being better fixed financially, and their diet as a social habit is more and more increased as they get along in years. It is at that time you will get those attacks developed. Over and over again I have had patients put upon restricted diet and taught how to eat; some little correction given, perhaps a little nitroglycerin at

the time, just for the relief of the spasm, also the use of various aids to digestion; and those patients will make a perfect recovery and live a very comfortable life. On the other hand, if told that it is angina pectoris, they diagnose the disease as hopeless and practically nothing is done. I think the prognosis of those cases should always be kept clearly in mind, because the prognosis certainly is good.

DERMATITIS CAUSED BY PRIMULA POISONING.*

By DOUGLASS W. MONTGOMERY, M. D., and GEORGE D. CULVER, M. D.

Primula poisoning is probably not frequent, but curiously enough in the past few months we have run across quite a number of instances. Its previous infrequency may have been either due to absolute infrequency or to oversight on our part. In medicine one usually finds only what one looks for, and in primula poisoning, as we shall see later, the cause must frequently be persistently searched out or it will not be found. The following case illustrates the intensity the disease may assume, and its elusive etiology:

A woman, forty-four years of age, consulted us August 26, 1913, on account of a blotchy, intensely itchy erythema of the face, and a papulo-erythematous eruption of the flexor surface of the forearms, that had begun five months previously. Inquiry was made in regard to both rhus and primula poisoning, but the possibility of either was denied. The long, steady endurance of the eruption would exclude rhus poisoning, as the exposures to poison oak, in contradistinction to primula exposures, are interrupted.

These external causes of dermatitis being excluded, internal incitants to vaso-motor disturbance were sought for, and enough was found to account for the trouble. She had symptoms of slight icterus with a somewhat enlarged liver, and an immensely dilated colon, with tenderness in the left inguinal region. The urine contained indican, and showed also a greenish yellow line with the cold H N O_3 test, that we assumed to be due to bile. She was taking about a quart of buttermilk a day, which represented a decided intake of cheese, and she was eating a considerable quantity of fruit, the fructose of which is often very irritating to the skin.

She frequently had to take a soporific to induce sleep, and she had pains across the lower part of the abdomen, which she said she had often noticed preceded the outbreak of an eruption.

The most various things seemed to give rise to the eruption, as, for instance, a drop in the atmospheric pressure preceding a rain storm, or sitting up late at night to play cards, or the mental irritation caused by a wearisome relative. On January 23, 1914, an earthquake seemed to bring out two red spots, one on each cheek. Everything indicated the existence of an exceedingly labile vasomotor system, giving rise to an erythematous eruption, especially of the face and upper extremities, situations in which such vaso-motor eruptions tend to appear.

The first effect of our treatment also confirmed us in our view that we were correct in considering the disease a vaso-motor neurosis, as we were apparently strikingly successful, and were congratulated on our good fortune by a physician who previously had treated the patient.

During the summer she went to the country where she became perfectly well, through bad weather, card parties, and all other causes that seemed to be so deleterious while living in the city. Her husband wrote to us that he especially tried her out in these directions. Finally, she arrived home on the morning of July 28, and by the evening she was well on her way for another bad attack. She fled to the country again, and recovered speedily and completely. Immediately on hearing of this we wrote to the husband to get an expert gardener, and to search the house and grounds for primroses. They were easily found; they were around a fountain, and were the picture of innocence and loveliness. The patient did not know primroses by their name. The gardener subsequently admitted that he knew primroses caused trouble on the skin. Naturally, however, he was more interested in selling them, than in telling of their disagreeable effects.

On thinking back, the vagaries of the eruption were accounted for. For instance, the patient had helped her husband during the rush of the Christmas trade, and as a consequence was not so much at home, and had a marked respite, that we all ascribed to the treatment.

The erythema in this case was an intense dusky redness, especially marked across the middle zone of the face, with puffiness of the lower lids. The redness had the peculiar bronze tint seen in chrysarobin dermatitis, and gave the patient an Indian-like complexion, and after its subsidence a brown pigmentation remained. Once the eruption appeared as an itchy erythema of the privates. An attack was often accompanied by the appearance of vesicles and blebs. The itchiness and burning were so severe as often to require strong sedatives, both internally and topically.

In investigating the etiology of such an affection the physician necessarily must leave much to the patient. For instance, in this case, we remember distinctly that we early asked about the possibility of primroses as a cause, and being assured on this point, the idea of the affection arising from internal disturbances was taken up. In another case that one of us saw with a friend, the same lapse occurred; the inquiry regarding primroses was made, with a negative response, and it was only after an absence from home with recovery, and a return home with a relapse, that a more thorough search revealed the cause.

Very shortly ago we were consulted by a young man with a light red, mottled erythema of the face and hands, and an urticarial eruption of the body. An inquiry about primroses elicited a negative response. At the next visit a more persistent questioning induced the patient to look into his garden more closely. He found the criminals; they had escaped observation because of not being in bloom, and because the leaves are low and inconspicuous. In this case the eruption was most marked on the left side of the face, the side on which he wore his button-hole flower.

It is quite characteristic of the affection that it should disappear on the patient leaving home, to reappear on returning. Foerster had a patient that got an attack on Easter Sunday afternoon for three successive years. Each time the "gouty eczema" was cured after a stay at a German health resort.[1]

The face, hands and arms, according to Foerster, are the almost exclusive situations of the dermatitis. We have seen it involve the trunk as an urticaria-like eruption, and, like poison oak, it may appear on the privates, although this is rare. As Foerster

* Read before the San Francisco County Medical Society, November 10, 1914.

has remarked it may show itself only as "an intensely itching or burning sensation confined to the finger pulps, which become puffed, tense and slightly reddened."

H. A. Sharpe has drawn attention to the occurrence of this form of eczema in the country from the wild primrose.[2] He thinks that it often occurs from handling the udders of cows that have walked among the dew-laden flowers.

In making a diagnosis it is often a pitting of our wits against the traps laid for us by Nature, and frequently it is Nature that wins out, and she may do so when we feel most confident, as for instance, for a long time in the first case here recited. Conditions in the alimentary canal are so often the key to eruptions on the skin and mucous membranes, that they constitute a temptation not to look for topical causes. When, however, in such a case the cause happens to be found by an outsider what a deal of opprobrium and ridicule the physician is subjected to! And we freely admit that in this case it was not an intellectually worked out diagnosis, but a chance thought that finally solved the problem.

PRIMROSE—Primula Sinensis.

One of the finest spring blooming pot plants. Easy to grow, pretty in leaf, handsome in flower, and continuously in bloom for months at a time. These merits alone would earn a place in every window; but when we add that it is one of the plants never attacked by insects and that it will bloom in a sunless window—where a Geranium or Heliotrope would never show a bud—it is clear that the smallest collection would never be complete without it. Our seed is saved from the choicest strains and can be relied upon to produce the largest flowers and finest colors.—Mixed—Large packet 25c. Plant from February to May.

The advertised description of the plant is included because it shows so well the attitude of the florist. This desire on the part of the flower dealer to sell the plant together with the beauty of the flower and its good blooming qualities that appeal so strongly to women and induce them to buy, will, we have no doubt, successfully prevent the elimination of this interesting dermatitis.

It is also interesting to note that the plant is seldom attacked by insects. Probably the same poison that causes the dermatitis in human beings also acts poisonously on insects, and so constitutes a defense for the life of the plant.

Discussion.

Dr. Emmet Rixford: It seems too bad to relegate such a pretty flower as the primrose to oblivion just because it occasionally causes an annoying dermatitis. I suppose it is true that cases of primrose dermatitis are more frequent now than formerly since the primrose, especially the Chinese variety, has been so much more commonly used as a house plant. However, there must be great differences in the susceptibility of individuals to the poisoning. In my house we have had a number of such plants but have had no trouble with dermatitis. The first case of the kind I saw I thought was poison oak because of the similarity of the eruptions.

Dr. Montgomery, closing discussion: There are many kinds of primroses; the most obnoxious ones to the skin, however, I understand to be the Primula obconica and the Primula sinensis.

There is a point that Dr. Rixford has just drawn my attention to, and that is the varying sensitiveness of people to this poison. This unusual cutaneous sensitiveness seems often to be dependent upon noxious fermentations in the alimentary canal. That it may exist without any autointoxication whatever seems also to be probable.

1 Primula Dermatitis by O. H. Foerster, Jour. American Medical Assoc., Aug. 20, 1910.
2 Primula Dermatitis. Its Occurrence in Rural Districts. Jour. A. M. A., Dec. 14, 1912.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

By ROBERT A. PEERS, M.D., Colfax.

The title "The Early Diagnosis of Pulmonary Tuberculosis" should probably read "The Earlier Diagnosis of Pulmonary Tuberculosis" because, whether we believe that tuberculosis is essentially an infection of childhood with the later or secondary manifestations in adult life, or whether we believe that most infections take place later in life than childhood, we must all admit that the tubercle bacillus has been implanted and has been nourished and propagated within the human body for months, at least, and in some cases for years before the symptoms develop sufficiently to call for treatment or to bring the patient to the physician. Thus it seems rather out of place to speak of early diagnosis when the disease has existed for many months.

We do know, however, that many patients arrive at the doctor's office at a relatively early period of the disease and while there is yet time, if the cause of the illness is recognized, to prevent its spread and to secure an arrest of the process. We do know, also, that many of such cases go unrecognized and that they are treated often as malaria, chronic bronchitis, asthma, anemia, indigestion, or one of many other disorders. It is my desire to attempt to outline the means by which an *earlier diagnosis* can be reached.

In the first place then it is necessary for the physician to have in mind that tuberculosis is the most common disease with which we have to deal—one that infects perhaps 90% of our clients at one time or another and which causes the death of one out of every six persons in this state. It is absolutely necessary that these facts be appreciated in order that the physician may think of tuberculosis whenever making a diagnosis, for only in this way will tuberculosis be discovered early as a rule rather than as an exception. The patient is febrile—think of tuberculosis as one of the febrile diseases at the same time that you consider typhoid, malaria, and the like. The patient is run down, tired and nervous—think of tuberculosis as well an anemia, malaria, overwork or other similar causes. The patient clears his throat and raises in the morning—think of tuberculosis as well as catarrhal conditions of the naso-pharynx, pharynx, larynx, and other parts of the upper respiratory tract. In fact think of tuberculosis as a possible cause of any febrile condition, any depreciation in weight, strength, or working force, any cough or clearing of the throat, and eliminate tuberculosis or discover it as the cause of the symptoms.

Commencing then with the due appreciation of

* Read before the Sacramento Society for Medical Improvement, June 15, 1915.

the morbidity and mortality of tuberculosis, the most valuable aids in making an earlier diagnosis are: first, plenty of time for examination; second, a capacity for taking pains; third, a knowledge of the methods necessary to elicit physical signs; fourth, the ability to properly interpret the meaning of physical signs and symptoms.

Of these aids I unreservedly name the first—viz.: plenty of time for examination—as the most important because without plenty of time for examination one cannot expect to diagnose tuberculosis in the relatively early stages. At Colfax we allow from an hour to an hour and a half for an examination and not infrequently from two to three hours are expended on a patient before a diagnosis is reached. First comes the taking of the history including the recording of personal matters as social condition, sex, age, nationality, and occupation; then the family history, going carefully into the health of every living member of the family and as carefully into the cause of death of those who have died. Especial attention should be paid to questioning regarding cases of asthma, chronic bronchitis, chronic pneumonia, gastric disorders, as to whether the living members are thin or well-nourished, and many other points which experience will prove to be of value. The past history will furnish information, in addition to that pertaining to diseases which are well defined, as to atypical fevers, coughs which have hung on, run down spells accompanied by coughs and night sweats, the occurrence of pleurisy, with or without effusion, the persistence of clearing of the throat, variations in weight, including the average, maximum, and minimum weights since adult life has been reached. The history of the present illness will include generally the history of the past several months. The most common first symptom is a tired feeling usually coming on in the afternoon. Patients describe this variously as a "tired feeling," "a lazy feeling," or "a lack of ambition," and in many other ways. This tired feeling may precede, accompany, or follow a loss of weight or may be entirely independent of any change in weight. It usually precedes the occurrence of a frank cough by several weeks or months but is usually secondary, in point of time, to a clearing of the throat. This clearing of the throat, especially in the morning, has been an early symptom in hundreds of our cases. The other symptoms of cough, rapid pulse, loss of weight, afternoon temperature, pains in the chest are so well known that they may be passed without comment. It is not the presence of any one or all of these symptoms that makes for diagnosis, but a combination, because we cannot make an early diagnosis from the presence of symptoms but must judge our case by a consideration of the history, the symptoms present and the physical, laboratory, and biologic findings.

The physical examination should include the pulse rate, temperature, weight as compared with the height and also compared with the previous weight and the normal weight, the appearance of the skin and complexion, the size and contour of pupil and the reaction, the size of the thyroid, presence or absence of enlarged glands, the fingers: to see if clubbed, the nails to see if curved or straight, the general appearance to see if toxic or dyspneic, and the chest examination. The pulse rate may be accelerated or may be normal in number of beats although usually the pulse is relatively rapid even in early cases. The blood pressure is usually low; in fact, in our cases of tuberculosis with a normal or increased pressure a urinalysis is at once called for. The temperature may be subnormal, normal, or slightly elevated. In order to learn anything from the temperature one should take several readings a day for a number of consecutive days. One temperature reading is more apt to mislead than to be of value. The weight is important but a patient may have advanced tuberculosis and be above normal weight. The early tuberculous patient is more apt to be well nourished than thin and this must not be forgotten in making the diagnosis. The skin will perhaps be pale but may be ruddy and of good color. The condition of the thyroid may explain a rapid pulse and slight fever and this gland should always be examined. Enlarged cervical glands are found in nearly every case of tuberculosis we see but as we see practically none but the tuberculous we cannot speak regarding their presence in the non-tuberculous. Clubbed fingers and curved nails are to be found usually in late cases. Patients markedly dyspneic and toxic usually do not belong to the early cases—although sometimes in early acute cases these symptoms are found.

The examination of the chest is important and plenty of time should be allowed in order that it may be thorough. Every patient, male and female, should be stripped to the waist and have the lower clothing loose at the waist. This is very important but is frequently not insisted upon. The patient should be placed in a good light and may be seated or standing. I prefer to have my patients seated. It is easier for me to examine them when in this position and is less tiring. A tired examiner does not do his best work.

The appearance of the chest is noted and in early cases may look normal. The expansion is also noted as to degree and also one side in relation to the other. Where the involvement is not great the expansion may appear normal but frequently there is a lagging behind or a deficient expansion of one or both lungs or of a part of one lung. Percussion very frequently reveals dullness at one or other apex and it is always advisable to percuss along the anterior border of each trapezius muscle because it is here earlier than elsewhere that one elicits a restriction of the resonant area. A restricted apical area of resonance means usually that there is infiltration or contraction from scar tissue. Tuberculosis is the most common cause of either of these conditions. This outlining of the apical area of resonance is, in my mind, of considerable importance and should never be neglected. A careful observance of this rule will soon convince any examiner that he must not look so much for a dulling of the whole apex as for a restriction or limitation of the resonant area. After the percussion and outlining of the apices it is well to

percuss the entire chest from below upward and note differences of pitch. Also it is well to make percussion before inspection of the respiratory excursion because deep breathing influences quite considerably, at times, the limits of resonance and dullness.

Regarding auscultation I will state that it is of extreme importance and should be thoroughly carried out. One should have a quiet room, a good stethoscope, and a knowledge of the best method of eliciting physical signs. The signs found in relatively early cases are higher pitched breathing, a lengthening of the expiratory murmur, roughened breathing, and rales. The first two are heard best during quiet or slightly lengthened breathing. The latter (rales) may be heard in quiet breathing but, in that case, the lesion is usually not an early one. It is often necessary to have the patient cough and then breathe deeply or, after deep expiration, cough and take a deep breath. Most of the physical signs which are overlooked have been lost because the examiner did not know how to elicit them rather than because he failed to recognize them when heard. Rales that are permanent (i. e., persist after coughing) are more probably due to tuberculosis than those which are transitory or disappear on coughing. Rales found at the apex are, as a rule, but not of necessity, more probably due to tuberculosis than if found only at the base. Rales in asymmetrical areas are of more importance than if found over a corresponding area of each lung. It is to be remembered though, and emphasized, that rales found in large numbers indicate that the infection is not an early one.

The fluoroscope and the X-ray plate are valuable aids in diagnosis but do not distinguish between healed and active lesions. With the fluoroscope one can frequently observe in addition to the shadows due to disease the lack of chest expansion and the failure of the diphragm to properly rise and fall. The X-ray plate is more valuable in doubtful cases because it can be studied for a longer period of time and furnishes a permanent record.

An examination of the sputum should always be made and, if negative, repeated one or more times. The best specimen is the one obtained the first thing in the morning when the patient "clears out the chest." The patient should be instructed that the specimen should come from "deep down" and not from the throat. Frequently the tubercle bacilli will be found if the sputum is obtained during the occurrence of an exacerbation when they are absent at other times. There are times also when the patient expectorates what is described as a peculiar, sweetish tasting sputum. This almost always contains tubercle bacilli. Much's granules may be looked for if tubercle bacilli are not discovered by the ordinary means of examination. It must be borne in mind, however, if we are going to make early diagnosis of our tuberculous cases that we must consider the findings at sputum examination as of secondary importance when they are opposed to the history, symptom complex, and physical signs. Much has been written about the significance of the presence of albumin in the sputum as a sign of tuberculosis. Many believe that its presence is indicative of pulmonary tuberculosis while other, equally competent, observers believe otherwise. Our experience has been with purely tuberculous cases and we have not had sputa from non-tuberculous patients so that we could make personal observations of value on this point.

Tuberculin tests are of value in the presence of signs pointing to active disease, such as cough, expectoration, loss of weight, night sweats, fever, etc., but should not be considered aside from other symptoms. The test which is really the most reliable is the subcutaneous test which produces a systemic and, at times, a focal reaction. There are so many unpleasant features about this method that it is not generally used but has been abandoned in favor of certain cutaneous and percutaneous methods. The scope of this paper will not allow an extended treatise on the subject of tuberculin tests and I shall merely state: First, we personally use the intradermal method. Second, we make up our dilutions fresh for each test. We do not use a tuberculin dilution more than forty-eight hours' old because we believe many failures to obtain a reaction are due to the use of inert tuberculin. Third, tuberculin tests are merely confirmatory and not absolute. That is, we do not accept the verdict of the tuberculin test to the exclusion of all other methods of examination. Rather, like the sputum examination, it is secondary. This does not mean that we reject the evidence furnished by a positive tuberculin test as pathognomonic of infection by the tubercle bacillus. We believe most positively that the occurrence of a positive reaction to tuberculin means that the patient has at one time had tuberculosis with the formation of tubercles. What I wish to convey is we do not believe that a positive reaction necessarily indicates the presence of active tuberculosis requiring therapeutic measures.

In passing, I might add, bearing upon this point of when it is necessary to apply therapeutic measures and when it is not necessary, that much laboratory work is being done in an effort to develop a complement fixation test analogous to the Wassermann test in lues whereby it will be possible to determine those patients with early tuberculous lesions requiring medical supervision and treatment. If these efforts are successful a great advance will have been made in the attempt to control this disease.

In conclusion, I would lay stress upon the following points which I have endeavored to make:

1. We should bear in mind that most persons with whom we come in contact have at one time been infected by the tubercle bacillus and we should have tuberculosis in mind when making a diagnosis in every obscure medical case.

2. Examination must never be hurried but must be slow and methodical.

3. The patient should be examined with the chest fully exposed.

4. The chest should be carefully examined by all means at our disposal; inspection, percussion, auscultation, and by means of the Roentgen ray. In

auscultation, coughing before inspiration is a valuable aid in eliciting rales.

5. A single negative sputum examination is not conclusive. Several negative sputum examinations should not outweigh results obtained by other methods.

6. A positive tuberculin test means that tubercle formation has been present in the person reacting to the test but does not necessarily indicate the need of treatment.

7. A diagnosis in early tuberculosis must be made only after a careful weighing of the patient's history, his symptoms, his physical signs, the examination of his sputum, and his reaction to tuberculin. It is here that judgment and experience find their highest expression.

THE OCCURRENCE OF HEART BLOCK IN ACUTE DISEASES.*

By HERBERT W. ALLEN, M. D., San Francisco.

In the last ten years the number of reported cases of heart block has reached very considerable proportions, due largely to the interest taken in the subject following the successful experimental production of the condition, and to the more general use of graphic methods in the study of cardiac diseases. The great majority of the reported cases are instances of the chronic variety, as usually met with in adult life. That heart block may occur as a transient or even permanent feature of acute disease at any age is not, I think, very generally understood, nor is the importance of its recognition fully appreciated. One finds here and there casual reference to the fact of its occurrence, and some of the special works on heart disease make particular mention of it, but in looking over the literature on cardiac disease for the past seven years I could find only three articles dealing more or less directly with the subject, aside from individual case reports. Peabody in 1910 reports a case and reviews the literature to that date. Cowan in 1912 gives his experience, embracing a number of cases; and Lewis in 1913 in a lecture emphasizes particularly the importance of the recognition of this condition. Mackenzie in his numerous writings occasionally makes mention of it.

Before giving my results of a review of the literature, it may be well to define just what is meant by heart block. Lewis defines it as an abnormal heart mechanism in which there is a delay in, or absence of, response of the ventricle to auricular impulses, and this conception of the condition is the usually accepted one. Normally the ventricle contracts in response to an impulse received from the auricle, the stimulus traveling from the upper to lower chamber along the neuromuscular tract known as the auriculoventricular bundle. The time for the passage of this impulse varies within fairly narrow limits, 0.12 to 0.18 of a second, and does not in health exceed 0.2 of a second. The mildest grades of heart block consist in a mere prolongation of this conduction time; more severe grades in the occasional failure of the ventricle to respond to the auricle; then the ventricle may contract only after every second, third or fourth auricular contraction; finally, complete dissociation occurs and each chamber beats independently and at its own intrinsic rate. The milder grades of heart block cannot be recognized without the aid of graphic methods; complete block, owing to the slow ventricular rate usually present, does not necessarily require tracings for its detection.

In order to obtain some idea of the frequency of occurrence of heart block in acute diseases, I have examined all the references available to me and have found mention of sixty-one cases. That number does not, I think, give a fair idea of the frequency of the condition, partly owing to the transient nature of many cases and partly to the failure of many physicians to attempt to differentiate the several kinds of cardiac arrhythmia. In the interests of prognosis and of treatment, such a differentiation is however decidedly important. Peabody, in his article published in 1910, found only eleven cases in the literature where there was good proof of the presence of heart block in association with acute infection; evidently the cases are now being recognized more frequently.

These sixty-one cases have occurred as manifestations of a variety of acute conditions. As might have been expected the rheumatic group of infections includes by far the largest number of cases; eighteen in association with acute articular rheumatism, two with pericarditis and one with tonsillitis. In possibly five of these the block was thought to be complete; all of the others were instances of partial block and of transient duration.

Diphtheria comes next on the list, accounting for nine cases. Five of these were fatal, though just how much influence the heart block had on the fatal outcome is problematical. That block is of infrequent occurrence in diphtheria is indicated by two recent studies of the heart in this disease. Gunson investigated 120 cases, making numerous polygraphic studies. He does not report any instance of block. Hume and Clegg, in a study of 573 cases, found one with block. Three were thought to have auricular fibrillation and heart block, but in the absence of electrocardiographic study there is naturally some doubt of this.

Acute endocarditis accounts for four cases, all of which were fatal. In two the block was complete; in two incomplete. Two cases of chronic valvular disease with transient reinfection showed partial block during this stage. It is strange that not more instances of this character are reported, for several writers, particularly Lewis and Mackenzie, have called attention to the frequency of its occurrence.

In association with pneumonia six cases are reported, all of partial block of transient nature.

Pyogenic infection of one sort or another accounts for seven cases. One of these was in association with general gonococcic septicemia and three with local gonococcic infection. Complete block developed in the course of an infected mastoid wound. One case had only cystitis for an etiological factor, while sepsis following trauma

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accounted for one. This last was rather interesting. A man shot himself with suicidal intent apparently directly through the heart, for subsequent X-ray examination showed the bullet in the retrocardiac space near the vertebrae and next to the right auricle. It moved with each heart beat but lay outside the heart wall. Three weeks after the shooting the man developed severe pericarditis and pleuritis following infection of the wound. Pulse was 70 to 80. Recovery ensued. One year later he was examined and found to have a pulse of 40 and tracings showed complete block.

In association with typhoid fever three cases are reported, all of transient nature. Erysipelas, influenza and scarlet fever each account for one case, all of mild and temporary character.

Complete block developed in one instance during a six months' illness from tuberculous peritonitis. No other etiological factor could be found and it was known that for two years previous to the illness the pulse had been of normal frequency.

One case is attributed to acute gout and one to an illness which was called gastro-enteritis. Complete block developed after severe hemorrhage in one patient. This was of only a couple of days' duration; subsequently the conduction time was normal.

There was one case of partial block which came on seven days after an operation for exophthalmic goitre. Recovery ensued after one week. Finally, one case in which tracings are said to have shown complete block developed after an alleged fall on the head. There was high fever for several days and the exact etiological factor is in doubt.

A certain objection can be urged against the acceptance of all of these reported cases as instances of heart block, for in some where tracings are said to have been made they are not published, while in quite a number no graphic records were obtained, the diagnosis resting on the occurrence of marked brachycardia with frequent visible jugular pulsations and sometimes syncopal or epileptiform attacks. However, with the great majority there is but little doubt of the correctness of the diagnosis.

In analyzing these cases several facts of interest are brought out. In general the condition was a decidedly mild one; in some the block was complete and permanent; in the majority it was incomplete and transient. It may be noted only during a single day of the illness or over a considerable period and well into convalescence. In a great many instances it is unattended by any subjective manifestations, but in quite a number definite symptoms of Adams-Stokes syndrome occurred: giddiness, transient loss of consciousness or epileptiform convulsions. As for the age incidence, the condition may occur at any age but in contradistinction to chronic heart block, which is more commonly seen in elderly people, the acute cases are more frequently met with in the young. A number were in children under ten years; the youngest in a child of three. One striking feature is the completeness with which all trace of the block may disappear. For example, Gosse reports the case of a boy of twelve who had mitral and aortic insufficiency and who had previously suffered from pericarditis and rheumatism. He ran an irregular fever for four weeks, for a time there was only a prolongation of the a-c interval; later partial block developed and persisted for eighteen days; this then disappeared and finally the a-c interval returned to normal. The condition was verified by polygraphic and electrocardiographic records. There are a number of such examples in the rheumatic group of cases.

Among the sixty-one cases death is definitely stated to have occurred in twelve; in some the outcome is not mentioned. Four of these were cases of acute endocarditis which is so often fatal; five were instances of diphtheria in which the death rate is also fairly high. In several cases careful examination of the heart has been made, including serial sections of the auriculoventricular node and bundle, and we are in consequence in possession of data throwing some light on the nature of the process that is directly responsible for the heart block. One of the most carefully studied cases is reported by Butterfield. A girl of sixteen was ill for seven weeks with acute endo and pericarditis. Partial block developed eleven days before death. Microscopical examination of the heart showed perivascular inflammatory lesions in the myocardium, diffusely scattered but conspicuous in the region of the central fibrous body where they had invaded the auriculoventricular bundle. Fleming and Kennedy made a careful microscopical study of the heart of a girl of ten who died on the tenth day of a diphtheria and who developed a complete block before death. There was found an interstitial myocarditis; infiltration with inflammatory cells, mostly lymphocytes, as well as focal collections of these cells. Similar changes occurred in the auriculoventricular node and the first part of the bundle.

One of Gerhardt's cases is of interest in that the acute heart block was recovered from and the patient died later of another cause. A man of twenty-five was sick for several months with angina and rheumatism complicated with pericarditis and pleuritis. Early in the disease his heart was irregular and tracings showed a varying grade of block, probably at one time complete. There were several attacks of anxiety and loss of consciousness during which his pulse became very slow. Recovery finally ensued. When about ready to leave the hospital the patient contracted typhoid fever and died in the fifth week from hemorrhage. Examination of the auriculoventricular bundle by means of serial sections showed areas of decided cellular infiltration, particularly marked in the neighborhood of the vessels. Also there was a marked change in the vessels themselves: decided thickening of the intima so that in many of the larger vessels the lumen was decidedly narrowed, slight changes in the media and some cellular infiltration in the adventitia.

We have positive evidence then that in many cases at least of acute heart block we are dealing with a condition dependent on an organic basis. Whether or not all cases can be thus explained is not yet definitely settled. Lewis, whose opinion

carries great weight, feels that they can. Others differ with him and would explain some of the cases as due to increased vagus tone. In support of this contention is the occasional relief of the block by the use of atropin and also the well known fact that vagal stimulation is capable under some conditions of causing heart block. Probably though this does not occur unless the auriculoventricular node and bundle are already damaged by disease. The weight of evidence is certainly in favor of an organic basis for all cases.

The real importance of the recognition of these cases of acute heart block lies in the fact that through them we have definite evidence of the involvement of the myocardium in the disease process and in many instances this is the only evidence that the infection has spread beyond its original confines and has invaded the heart. The involvement of the auriculoventricular node and bundle is of course only part of the general myocardial invasion; through knowledge of its specialized function we are able to recognize disturbances in it.

In place of involvement of the auriculoventricular node or bundle we may have damage to one or other branch of the bundle. This alone does not cause any irregularity of the pulse and without the aid of the electrocardiograph cannot be detected. The only physical sign that may accompany it is a decided reduplication of the first heart sound. Disease of one bundle branch is usually a chronic process but it may occur as a manifestation of acute infection, and when it can be recognized it has the same significance as true block.

In conclusion one may say that heart block occurs not infrequently as a manifestation of acute infectious disease. Probably a good many cases are unrecognized because of their very mild and transient nature. In many cases the disturbance has been proven to depend on definite organic changes; probably the majority if not all cases are to be explained on a similar basis. Partial heart block may be the sole manifestation of involvement of the heart in the acute infection.

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PITFALLS IN THE DIAGNOSIS OF RENAL LITHIASIS.*

By MARTIN KROTOSZYNER, M. D., San Francisco.

In spite of the great strides made in the correct preoperative recognition of surgical renal lesions, and in spite of the many exact methods of examination by which renal surgery of late has advanced to an almost marvelous degree, the diagnosis of surgical kidney lesions is, nevertheless, in many instances very difficult and, not rarely, entirely impossible. The application of the majority or even of all of the many exact methods of examination at our disposal to-day does not always give reliable results of truly pathognostic value. The hidden position of the kidney renders palpation difficult and may, on account of the manifold relations of the kidney to important neighboring organs, render it a procedure of doubtful and misleading diagnostic character. Chemical urinalysis, so valuable in internal medicine, is of no material aid in the majority of surgical renal lesions. Cystoscopy and radiography will at times fail to give exact data, and especially the latter method may occasionally lead to erroneous conclusions; determination of renal function, moreover, by many renal surgeons heralded as unimpeachable evidence in renal diagnosis, is almost valueless in the absence of a marked relative functional discrepancy, and even the most modern diagnostic method, pyelography may, in many instances, fail to furnish a clew to the correct diagnosis.

These remarks are not written in a pessimistic attitude of mind, inclining towards minimizing the value and efficacy of our modern armamentarium in renal diagnosis; for the old adage, *"qui bene diagnoscitur, bene curabit,"* is nowhere in the realm of medical science more appropriately applicable than to renal surgery. The many noteworthy observations on clinical renal lesions, which are recorded in the literature since the first kidney was removed by Gustav Simon, have obtained their real and intrinsic scientific value on the basis of a thorough knowledge of modern diagnostic methods, and the preoperative diagnosis of renal lesions, therefore, stands to-day on a much firmer scientific basis than formerly. Thus it occurs that the diagnostic exposure of the kidney, which up to a short time ago was practiced by many surgeons as a procedure of choice, is to-day a method of last resort which is considered permissible in exceptional cases only.

The diagnosis of nephrolithiasis seems at present a simple procedure on the basis of the evidence furnished by radiography and is undoubtedly easily

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accomplished, in many instances, by the general practitioner. There is, nevertheless, no other pathological condition in renal surgery so liable to offer diagnostic pitfalls as renal lithiasis. A few facts should therefore be borne in mind by the surgeon in order to avoid grave diagnostic errors:

1. A kidney may for a long period of time contain one or more stones of large size, occupying a position in the renal pelvis extending into the calyces, without causing any subjective and only such slight objective symptoms that the existence of nephrolithiasis is either entirely overlooked or not suspected.

A large pyonephroctic stone kidney was removed from a man of 52, who had been treated at various hands for stone in the bladder. All his symptoms had pointed to the bladder, in which the cystoscope revealed two small concrements. On account of the microscopic findings of numerous pus-cells, an infection of the upper urinary tract had been suspected, which was traced to the right kidney, and radiography demonstrated several characteristic calculi-shadows in the region of the right kidney.

2. In the presence of one or more calculi in the kidney, pain may exist in the opposite organ. This phenomenon is elicited by the reno-renal reflex exerted from the diseased to the healthy organ.

A remarkable specimen of a left-sided pyonephroctic stone-kidney, which originally contained so many calculi that they could not be replaced into the opened kidney, was removed from a man of 45, who came under observation with vague symptoms of a moderate pyuria and occasional painful sensations of indefinite character in the back and right-kidney region.

3. Pain may be of such vague nature and location as not to suggest its being in any way connected with the diseased organ.

A large pyonephroctic stone-kidney was removed from a woman of 55, who had complained of various neurasthenic paresthesias, including vague pains in the back, which for many years had been treated as lumbago. No subjective or objective symptom pointing to a lesion of the urinary tract had existed except a moderate pyuria. A careful urological investigation including radiography demonstrated at once the correct diagnosis.

4. Pain due to nephrolithiasis may be so referred by the patient that a disease of another organ is diagnosed.

A woman of 30 with severe pyuria and typical attacks of right-sided colic, showed radiographically two small well-defined shadows on the right side of the spinal column at the point of an ureteral impediment on that side, and apparently in the course of the ureter, as ascertained by a shadow-casting ureter catheter. At the operation the ureter was found to be imbedded in dense adhesions, particularly at the point of its crossing with the ext. iliac; in the attempt to free the channel from adhesions, the peritoneal cavity was opened, and a long and tortuous appendix was found to be a part of the dense adhesions to the ureter. In the center of the opened appendix fecal concretions, which corresponded to the shadows on the plate, were found.

5. In every case of long-standing pyuria, with negative findings for tuberculosis, the possibility ot an existing calculous pyonephrosis, though suggestive renal symptoms may be entirely absent, should be considered and either verified or ruled out by a thorough radiographic examination of the upper urinary tract. The following case will illustrate this point:

A man of 40 entered the hospital with a severe pyuria, which was supposed to be due to a long-standing vesico-rectal fistula, acquired through a prostatic abscess in the course of a severe gonorrheal infection. The patient could only evacuate his bladder in a sitting posture, all of his urine in this way escaping through the rectum. Before operating on the fistula it was deemed necessary to rule out, by cystoscopic means, a possible ascending infection of the upper urinary tract. This examination, which was accomplished with great difficulty, demonstrated an infection and a marked functional deterioration of the right kidney. The diagnosis of right-sided pyonephrosis through ascending infection seemed to be so obvious that an X-ray examination was omitted prior to nephrectomy. The removed kidney, on being opened, was found to be filled with calculi of various size and configuration.

An aseptic right-sided nephrolithiasis had existed in this case before the onset of the lesion in the lower urinary tract, by which, in all probability, infection of the stone-kidney was caused.

6. In doubtful cases pyelography may clear up the diagnosis. Occasionally a stone, which does not appear on the plate, obtained by ordinary radiography, may be demonstrable through pyelographic exposure.

An extremely stout and fleshy man of 46, with a severe right-sided renal pyuria, and negative laboratory and guinea-pig findings as regards tuberculosis, showed on the renal plate upon ordinary radiography no evidence of a stone-shadow on the affected side, while, later on, two pyelograms, made at different sittings, demonstrated a distinct round shadow occupying the upper calyx, which on account of its difference in intensity was interpreted as a concrement-shadow.

7. Calcified tubercular foci within the renal parenchyma may on the plate look exactly like calculus-shadows.

A man of 41 entered the hospital in a state of anuria and complete uremic coma. Radiography showed two distinct shadows in the region of the right kidney, which were interpreted as calculus-shadows, but which, on exposure of the kidney, were found to be due to calcified tubercular foci.

8. An apparently typical stone-shadow may be cast on the renal plate by an object outside the kidney.

A characteristic stone-shadow was observed on the left renal plate of a young man who was under observation at the hospital on account of typical attacks of left-sided renal colic. At the operation nothing abnormal was found in the left kidney, while a tuberculous lymph-gland, corresponding in size and configuration to the shadow on the plate, was removed.

9. Small renal stones with rough surfaces (uric acid stones, or urates), which occasionally are not demonstrable on the plate, may cause a symptom-complex (severe hematuria, etc.), pointing to a grave kidney lesion (tuberculosis, malignancy).

A man of 80 came under observation on account of intermittent attacks of hematuria, which cystoscopically could be traced to the left kidney. On account of an apparently palpable enlargement of that organ, a renal tumor was assumed to be the cause of the hematuria, which, though, at the post-mortem examination was found to be actually due to a small and rough uric acid stone located in the lower calyx near the renal pelvis.

10. In cases where stone-shadows are present on renal plates of both sides, the existence of a fused or horse-shoe kidney should be borne in mind. Several such cases have been recorded in the literature of late, the last one by Lund of Boston in a recent report of the meetings of the New England Branch of the American Urological Association. I wish, in this connection, to report the following rare observation:

A man of 32 entered the hospital on account of severe pyuria connected with pain in the right flank, and septic fever. No important data as regards previous affections of the genito-urinary tract could be elicited from the history. Cystoscopy demonstrated a moderate subacute cystitis; both ureter catheters can be carried to the renal pelvis, but no urine is obtained from the right, and very little urine from the left catheter. Finally, after several cystoscopic sittings, a few drops of a very purulent fluid are withdrawn by suction from the right ureter catheter; the functional and microscopic comparative examination gave the following result:

	R.	L.
Sugar (after Phloridzin)		
	0.	0.1
Urea	0.001	0.031
Microscop:	Almost pure pus; a few small round epithelial cells.	A few pus cells, small round epithelial cells, many blood cells.

Daily urine quantity about 1500 cc., daily quantity of urea between 15 and 25 grams. Irregular septic temperature between 100° and 102° F. Palpation of kidneys negative. Radiography shows typical calculus-shadows in both kidney regions almost symmetrically to the left and right of the second lumbar vertebra, a little below the 12th rib, and suggestive of being located in or near the renal pelvis. Pyelography did not materially aid the diagnosis, as almost all of the injected silver-solution ran back into the bladder.

Upon these findings the diagnosis of bilateral nephrolithiasis, with secondary infection and destruction of the right kidney (pyonephrotic stone kidney) was made. For obvious reasons the drainage of the right organ was considered the first and most imperative operative procedure.

Operation: Lumbar incision on right side. Upper pole easily freed, luxation of lower pole seemed impossible, therefore incision enlarged; the right kidney is now found to extend deeply to the left side of the abdomen toward the bony pelvis. The kidney is finally brought up into the incision and found to be a fused or double kidney measuring 42 cm. in width, its right half is almost entirely represented by a sack filled with muco-pus, while its left half appears to be fairly normal. No line of cleavage between the two halves, which showed independent renal vessels and ureters. A calculus of the size of a large olive-pit is felt in the renal parenchyma just above the pelvis in either half of the kidney and removed by small incisions, which are afterwards closed with catgut sutures. The pyonephrotic sack of the right side is incised, emptied and drained by a rubber-tube. The kidney is replaced and cigarette-drains placed at the lower and upper poles of the incision.

Closure of wound by layers.

The following notes were taken three days after the operation: Patient rallied well from the operation. Temperature 99°, pulse 100, volume fair, general condition good. Only a few ounces of purulent urine are thus far obtained by catheter. Bandages wet.

All efforts, though, to increase diuresis failed and the patient died, about a week after the operation, under uremic and septic symptoms.

Important items pertaining to the genito-urinary tract are:

No break in peritoneum over kidney, and the loose tissue around it shows hemorrhagic infiltration.

Bladder filled with thick creamy pus, ureteral openings normal on both sides; right ureter runs up in normal direction.

Kidney is of horse-shoe variety, whose right pyonephrotic half is drained by an incision, in which is a drainage tube.

There are two renal arteries slightly smaller than normal.

The two adrenals are in normal position.

Death was, according to the autopsy report, due to infection of the loose tissue around the right half of the kidney, recent peritonitis and broncho-pneumonia.

In the presentation of the observations, enumerated above, many diagnostic errors were reported, which occurred in spite of the application of the most modern apparatus at our disposal in the diagnosis of surgical kidney-lesions. It is by the candid report of such errors that our knowledge is materially enhanced and that mistakes in the future can be avoided.

Discussion.

Dr. W. P. Willard: I think one point should be brought out in the diagnosis of nephrolithiasis, and this is the uniformly poor plates we get as a rule of kidneys. The radiographers seem to be content with a plate that oftentimes will not show a renal calculus. I had a case the other day in which I insisted upon two or three plates being taken before the calculus was demonstrated. Then it showed up quite plainly.

I would like to ask Dr. Krotoszyner, with regard to this horseshoe kidney, whether he removed the calculi on both sides through the same incision.

Dr. Julius Rosenstirn: I would like to ask Dr. Krotoszyner whether some of these errors in diagnosis, with regard to stones or calcified mesenteric glands, would not be avoided by the stereoscopic exposure of the X-ray picture. We have for some time been taking such pictures in the Mount Zion Hospital with excellent results, and

have received from them great aid in the accuracy of our diagnosis.

There is no doubt that, with a modern stereoscopic view, a much more definite relative location of shadows can be made, and some of the errors of the kind that were mentioned here tonight might be avoided in the future.

Dr. Krotoszyner, closing discussion: In answer to the first question I wish to state that the horseshoe kidney was exposed by one large incision in the right loin of the patient. The stones were then removed through two small incisions in the renal parenchyma just large enough to permit of their extraction. If we would have been able to obtain more direct evidence by any of the many methods of examination, including pyelography, applied in this case, we might have been able to make a better preoperative diagnosis and to formulate a more rational operative procedure, and I have reported the case in order to give others a chance to avoid, if possible, similar errors in the future.

I have not had much experience with stereoscopic radiograms, but I do not think that we would have been able, even by this method, to answer the question whether the location of a certain shadow was within or outside the renal parenchyma. The case presented in this connection demonstrates another possibility for a diagnostic error, if we rely solely upon radiography in the diagnosis of renal lithiasis.

PEDIATRIC SITUATION IN EUROPE AND THE EFFECT OF THE WAR ON THE SAME.*

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You have asked me to give you a résumé of the pediatric situation in Europe, and the effect of the war on the same. In doing this, I will briefly confine my remarks to my own experience and observation, taking each place in turn, and pointing out the things which to me seem most characteristic.

London: My observation here is confined largely to Great Ormand Street Hospital for Children, and the children's wards in the University Hospital. The Great Ormand Street Hospital has the largest out-patient department of any of the hospitals I have visited in Europe. There is a regular post-graduate school in connection with the hospital, in which you can register in small classes for the out-patient work, or you can become a clerk to an assistant in the out-patient or to the visiting staff of the hospital proper. The clerks are expected to write up the histories and also make physical examinations, and in the hospital to do at least part of the routine laboratory work. The amount of material in the out-patient department is so abundant, and assistants so few, that the examinations are necessarily in most cases somewhat superficial.

In taking the history of a feeding case, little or no attention is paid to the previous diet. You find history after history simply reading, "the child was off its feed." There is seldom any reference to the character of the previous feeding. There is little or no attempt at modification, but a great deal of sodium citrate is used in the milk. The children are practically all of very poor parentage, and convalescents in the hospital among the older children do better on bread with tallow "drippings," than they do with butter, because they were used to it before.

London has the most poorly dressed, poorly nourished, poverty-stricken children of any of the cities I have ever visited. As a result, they have the greatest number of malnutrition, and later, rachitic cases. The latter exhibited some of the most extreme bony deformities. After seeing so many such cases, I can easily understand why rickets is called "englishe krankheit."

In connection with the hospital out-patient department, there is what is called the "Casualty Department." This corresponds to our minor surgical department. Small operations, like removal of tonsils, adenoids, circumcisions, opening abscesses, are performed here. It is here that so many tonsil operations are performed by the Waugh enucleation method. It is rapid, clean, and complete, and with but little hemorrhage. I have seen Mr. T. Babbington Ward do as many as eleven, together with the adenoids, in less than an hour. Mr. Waugh's instrument is used in all these cases, and chloroform was the routine anesthetic.

There is no better place in the world to study rheumatism and its manifestations and complications, than in London. I was a daily visitor, and special student in Drs. Poynton and Still's clinic, and saw many rare rheumatic complications. Dr. Poynton, who has made more of a study of rheumatism in children than any other man in England, and the world perhaps, told me there is more rheumatism in London, than anywhere in England. He has done but little in the last few years on the bacteriology of rheumatism. Nearly all cases start, or are associated with chorea. The nodules, seldom seen in America, are very common. They are so large, that in many cases palpation is unnecessary. You can see them. The most common locality is on the elbows, the spinous processes, and sometimes on the tendons. Many times they stand out like grains of corn under the skin. These, Poynton considers as rheumatism in miniature. They are a bad prognostic sign, and nearly always associated with marked cardiac symptoms, endocarditis.

Closely related to rheumatism, with its characteristic deformity, is Still's disease. More cases are seen here than anywhere in the world. These were practically all in Dr. Still's wards. They were being treated with radium. Sometimes it was thought an improvement was noticed, but it was only transitory, and it was agreed that no marked permanent benefit followed its use.

Other interesting things observed, were a great number of apparently primary pyelitis cases. There was also an epidemic of scarlet fever. I saw a number of rare cerebellar tumors with most interesting and characteristic symptoms operated by Mr. Waugh, with complete recovery.

A very unique feature of the London pediatric relation, was the meeting of the Pediatric Society at the Royal Academy of Medicine. At this meeting, each man presents his case written up in detail, with history, and physical findings. The cases are numbered with large numbers, and

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each member has a printed history of the case before him. You go from case to case, like so many exhibits, and make your own examination or observation. Many of the cases are brought here for diagnosis. After spending an hour with the cases themselves, the children and parents are allowed to return home, and the society meets in the assembly hall, and discusses each case.

On the whole, English physicians are not so accurate in their diagnosis, and have a tendency to use more drugs than in other places.

Paris: An investigation of the Juvenile Court was made in every city of importance. This was all my time permitted in Paris. Many moral points of view, and the way the public looks upon illegitimacy, near-white-slave, etc., would, I am afraid, be somewhat shocking to many American court workers. For instance, girls working in stores are given leave of absence to give birth to an illegitimate child, and then taken back as soon as they are able to work. A new Juvenile Court law was passed, but has never gone into effect as yet.

Munich: The most striking thing about Munich, which seemed characteristic of all the German cities, was the great emphasis placed upon hygienic and prophylactic measures. For instance, all children must be vaccinated when they reach a certain age. The health department sends out a notice when the child reaches the age of two. The method of vaccination consists in making four minute incisions with a fine scalpel, which has been dipped in the virus. These knives are then sterilized, by being placed on a revolving disk, so arranged that each knife passes through a flame. This method of vaccinating leaves a very little scar, contrasted with the big English scar, and it was a very rapid and clean method. An officer in charge told me that the department had vaccinated as many as 600 in one hour. I saw one complication following vaccination, which consisted of large blebs in the mouth and throat, and edema about the uvula. This was accompanied by temperature, loss of appetite, etc. Their statistics showed that one case in 3,000 was affected in this way.

Pfundler's clinic in the university was well attended. Representatives were there from all parts of the world, except England. Pfundler's clinic is not large, and he has remarked that he had more assistants than patients. All courses are given in German.

One of the very important features of this clinic is the milk station. They not only gave out modified milk, but tea. One of the most unique milk bottle washers and sterilizers that I ever saw, was in this clinic. The apparatus consisted of a large wheel, about ten feet in diameter, which picks up the bottles, washes them inside and out, sterilizes them with boiling water, and deposits them again. In connection with the milk station, there is a normal infant clinic which tends to keep the child in sound health. The best one in America, compared to this, is found in Toronto.

I did not see or hear of a case of typhoid or malaria in Germany or Austria. It is authentically told, that only one case of typhoid was discovered in Munich in several years, and this was traced to a dairyman, who had it in his family a year before. The dairyman not only lost his business, but was imprisoned for nine years.

In our country we talk much of "swatting the fly." In Munich, and many German cities, they go beyond this, and starve them to death, by keeping the streets so clean that there is nothing for the flies to feed on.

Great case is taken of the infants and school children. All children are well provided with clothing and shoes, and when the parents seem unable to do this, the government does it.

Another very important feature which preserves the health of the child, is a two-hour intermission from school at noon time, for eating and resting. An excellent and most needful thing to introduce in American schools.

Another feature which illustrates the endeavor of the Germans to preserve the normal, and educate the laity, is found in the workingman's museum. In this, you see models, diagrams and concrete illustrations, showing the relative values of foodstuffs, necessitative cleanliness, and care of the child (including care of the eyes and ears), the most efficient and inexpensive way of making infants' beds and bedding, the preparation of foods, etc.; also information about every conceivable occupational disease, with its complications, and everything bearing upon the health of the child and parent. In addition to this, the government issues bulletins bearing upon health conditions, which are sought and read.

Vienna: My observation in this city is confined largely to Professor Pirquet's Kinderklinik in the University of Vienna, where I was a voluntary clinical assistant. I visited, however, St. Anne's Spital, and the Polyklinik. Professor Pirquet's Kinderklinik is one of the best equipped, and best organized children's hospitals in Europe. All of his assistants are able and enthusiastic workers. Each one is a specialist in some certain line of work. They all do research work, and have the scientific spirit so thoroughly fixed in them that very few of them encourage outside practice or consultation. When they enter they expect to devote their entire life to their particular line of work. Docent Schick could enjoy a big consultation practice, but he prefers the hospital work. With the exception of Docent, none of the assistants receive remuneration. They receive their room, but pay for their board. All voluntary assistants in the hospital must understand German, and agree to stay at least from six months to a year, before they can enter. In addition to the hospital and clinical work, all assistants are encouraged to carry on as much research work as possible.

There are two things which stand out most conspicuously in this hospital; one is the contagious ward, and the other the tubercular ward. Many of the contagious cases are placed in the famous glass "box." This consists of several rooms, separated by glass partitions running to the ceiling. Around the outside is a corridor, into which doors open from these rooms, where the doctor and

nurses enter. The center corridor communicates with the outside, and is used only for visitors. In the "box" we find diphtheria, measles, gonorrhea, scarlet fever, and other contagious diseases, side by side. In addition to the box, there are two other wards devoted to contagious diseases.

Tuberculosis: The tubercular wards in this hospital—the hobby of Professor Pirquet—are always filled. It is in charge of Assistant H. Koch. In addition to the tuberculin treatment, great advantage is taken of the open air and sunlight. During the winter months, the children are wrapped up and kept on the roof, while in the summer they are in the same place, the majority of them with no clothes on, becoming as brown as Indians, and wearing nothing but a hat. I have seen marvelous results in tubercular peritonitis and adenitis, as well as in pulmonary tuberculosis.

Tuberculin is given twice a week. Before each time of giving each child has a Pirquet test, and accurate measurements and observations of the reaction made every two hours to four hours thereafter. A new place on the body is used with each injection. A diagram of the body is made, with a different number on it for each time the injection is given, e. g., if the injection is the 12th, it always goes in a certain place, and after about 20, they start over again.

There is no place in the world where the X-ray is more freely used as part of the routine examination. Practically all of the cases are screened, all pulmonary cases are screened and Röntgenographed, and all rare cases photographed in colors. The Pirquet tubercular cutaneous test is made on all children entering the hospital.

The epileptic ward, in charge of Assistant Janusche, formally a special student of Professor Meyer, has some of the most beautiful colored charts illustrating the effects of certain drugs upon the intensity, number of attacks, etc.

The same system of colored charts is used in nephritic and feeding cases. In the feeding cases, the different colors represent different ingredients of food. They are all fed on the caloric basis.

The psycopathic ward, which is run in connection with this Juvenile Court, well illustrates the necessity of accurate observation, and study of delinquents.

I have never, in any hospital in the world, seen so many manifestations of syphilis in children; keratitis, epiphysitis, periostitis, etc.

It was during my stay in the Kinderklinik that the first children with icterus hemorrhagica were sent for operation to the Eiselberg clinic, Prof. Ranzi operating. I remember one case with a red count of 800,000, increasing to a little over 4,000,000 within three weeks after splenectomy. As far as I know, all did well afterwards, with one exception. This one died of embolism about three months after operation.

A hundred per cent. of the deaths are posted, thus making one of the best places in the world for pathological study, especially when coupled with courses of Erdheimer.

I was surprised to find Hamberger treating pulmonary tuberculosis by suggestion. He claimed that in many cases the temperature and all symptoms subsided.

Berlin: The most conspicuous thing in Berlin is the infant feeding of Finkelstein and Meyer. (My visit to Berlin was made about two months after the war had started.) At that time, Finkelstein had practically but one assistant—a lady physician. Prof. Finkelstein's work then was necessarily hasty and superficial. Everything was more or less disorganized. A very interesting feature is a separation of the beds by a glass partition running up 5 or 6 feet, and some wards have cheesecloth or muslin partitions separating the beds.

The effect of the war on pediatrics had been marked. Everything has given place to war. For instance, over one-half of the beds in Professor Pirquet's Kinderklinik are turned over to wounded soldiers. Over half of the out-patient service was cut off. Before the war began, clinics were held morning and afternoon. All morning clinics were at once cut out. Only the most urgent cases were admitted to the hospital. Work was disorganized, superficial, hasty, and under great tension. teaching and research has stopped. Practically all of the assistants who were doing such wonderful research work, are now devoting their energies to army and sanitary service. Assistants Göer and Kossovitz were compelled to stop their work on immunity of the new born, and Kossovitz is at present a prisoner in East Siberia. Göer, for the last three years was doing some work in diphtheria immunity, which promised valuable results. Meyerhoffer's work on metabolism was stopped, and he devoted himself to army duties. Rache is at the front; his work on X-ray in tuberculosis and intestinal diseases has ceased. Assistants Nobel and Hecht were carrying on the most interesting and promising stage of their research work with the electrocardiograph. Both men are now at the front. H. Koch's special study of tuberculosis and tubercular meningitis, and work on intubation has stopped, although he is still at the hospital. Docent Schick is also in the hospital, although doing no research. His cutaneous diphtheric reaction and other equally important research work is discontinued. Prof. Pirquet was about to give to the world (the result of his latest work), some new tubercular theory, but he, too, is now devoting a large part of his time to the wounded soldiers occupying his hospital.

Summary: Liverpool for orthopedics; London for mal-nutrition, rheumatism and its manifestations of chorea, endocarditis and nodules; Munich for hygiene, prophylaxis, health regulations and food stations, and preservation of the normal; Vienna for tuberculosis, syphilis, X-ray, pathology and research work; Berlin for infant feeding; America for practicability and some of the best of all.

If the war would stop today, it would take Germany and Austria more than a generation to regain the position they have so long held in the scientific world.

I believe one of the effects of the war will be a tendency to shift this scientific and research spirit to America.

TUBERCULOSIS OF THE FEMALE GENITALS.*

By J. W. JAMES, M.D., Sacramento.

The most important phase of tuberculosis from a gynecologist's standpoint is, as in so many other branches of medicine, *diagnosis*. The most frequent of the infections are probably those infecting the organs involved in the excretion of urine; but this brief article deals only with those organs essentially female, viz: the uterus, tubes and ovaries and the external genitals.

The frequency as well as the very existence of tuberculosis of these organs as an entity has been disputed; of course, it is well known they become diseased as a part of a general tuberculous infection, i. e., secondarily infected. Tuberculosis, therefore, for a long time was not considered as belonging to gynecologic affections; during the last two decades, however, it has been gaining in prominence. Von Wincle and his associates after investigation of a large number of cases, postmortem, found that of the diseases affecting these organs only 1% were tuberculous. A. Hegar in his investigations found tuberculosis of these organs to vary in prevalence in different localities and that also 1% was far too small a percentage; in Griefswald, in a series of purulent diseases of the adnexa, 24% was found to be tuberculosis while in Leipsic, Menge found 7.4%.

The literature is not very replete with percentages of this disease compared with other pathological happenings, but attention is very frequently called to the presence of tuberculosis. Kelly calls attention to tuberculosis of the tubes as a cause of sterility; also states that in several cases in the routine examination of uterine scrapings tuberculosis was found where it was not suspected. Kelly also emphasizes Leopold in saying pruritis is almost always due to chronic endometrites, and one of the prominent causes of endometrites is tuberculosis. In a paper by J. S. Cullen (Johns Hopkins Hospital Reports, Vol. 10, p. 91), he reports several cases of tuberculous endometritis. Tuberculous endometritis has been found in uterine myoma when microscopical examination was being made, tuberculosis not being suspected.

The route by which tuberculosis reaches the internal genitalia is also disputed. A. Hegar thinks there are three routes, the hematogenous, the ascending and descending—that is, infection downward by extension from the peritoneum to the genitalia—and ascending by extension from the vulva. Martin and Jung from the University of Griefswald, think that Hegar has laid too much stress on the ascending and descending method—that by far the most important route is the hematogenous.

The great difficulty in arriving at a conclusion as to whether the infection is primary or secondary is obviously to find the primary infection. Amann has laid down a law, that is, "The disease shall be called primary only in those cases where another tuberculous focus cannot be found in cadaveric section." This, of course, means that there are an extremely small number where hematogenous infection can be excluded. The fact remains, however, that a direct communication with the outer world exists; why cannot the membranes of the genital tract become infected as in the respiratory tract?

Baumgarten has shown us that T. B. introduced into the vagina of a hare never traveled upwards; also that it was unsuccessful in procuring an infection of these organs by introducing T. B. into the peritoneal cavity. He always got T. B. of the uterus and vagina, however, when T. B. was introduced into the tubes. Baumgarten denies the ascending mode of infection. Jung and Bennecke in their experiences obtained ascending infection in 10% of cases. Martin and Jung from their experiments make the following statement:

1. Where another recent T. B. focus can be demonstrated in the body in addition to the genital infection, a secondary hematogenous infection must be taken for granted. (This group covers the great majority of cases.)

2. When T. B. of another organ cannot be proven an ascending primary infection is to be accepted as probable. (This group is less numerous.) It is proven by animal experiments that nonmotile T. B. bacillus can spread upwards against the force of secretion.

The demonstration of the tubercle bacillus in the secretions is very difficult without culture methods; it is also very difficult to demonstrate them in the tissues, Sellheim laying great stress on the difficulty. Jung claims, however, that with proper care and the right technic a large number of these cases can be demonstrated—he used the formalin-alcohol method of fixation with Ziehl-Nelson stain. We also have animal inoculation, the injection of a guinea pig being always easy.

In point of frequency of infection, the tubes easily head the list; the next the body of the uterus; rarely the cervix and ovaries; very seldom the vagina and vulva on account of their resistant epithelium and acid secretions. Many authors claim that the undisputed evidence of the postmortem table shows infection of the tubes alone with T. B. nowhere else in the body. The T. B. has supposedly traversed the vagina and uterus without causing harm until they lodged in the tubes.

There are two forms depending on the virulence of the infection, the resistance of the patient and very probably the mode of infection. The first form, the so-called miliary form, is the form most likely caused by extension. The mucous membrane is first attacked and presents the usual picture of a catarrhal inflammation; giant cells and epitheliod tubercles are formed in the folds of the mucous membranes but T. B. are scarce. Guinea pig inoculations, however, soon show the cause of the inflammation; the tube walls are only moderately thickened; the muscular and serous coats are not generally involved. This form positively cannot be diagnosed without microscopical examination or animal inoculation. Of course, the disease may progress to destruction of the tube or it may heal with destruction and atrophy of the

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parts. The fimbriated extremities remain open, unlike other inflammations, until the disease is quite advanced; this is due to the slow advance of the disease, the mucous membrane becoming so thickened that it is thrown into a somewhat spiral formation, these spirals then adhere to each other, thus obliterating the lumen. In other inflammations the progress is more rapid, going out at the fimbrinated extremity, sealing it and converting the tube into a closed sac. The second form is as in other inflammations; the tube is converted into a closed sac sometimes as large as an orange, the contents being cheesy masses. Mallory found tubercular tubes weighing two pounds. The tube may rupture into the bladder or rectum or general peritoneal cavity; the only difference between this and the other forms clinically is the slow onset and more chronic form of symptoms, the temperature, etc., being lower and irregular, as in most T. B. infections. The second or cheesy form is very probably a hematogenous infection.

THE UTERUS.

T. B. of this organ occurs oftener than is noted. It is usually associated with tubal T. B. but may be involved alone and cases have been reported where endometrial scrapings showed presence of T. B.—after that the patient entirely recovered from the trouble.

All so-called catarrhal discharges of persistent nature when originating in the uterus should be carefully watched; a guinea pig inoculation is at least easy to perform if a currettage is not obtainable. Histologic matter is sometimes hard to get. The uterus as in the tubes has the second variety showing like changes, the whole organ being infiltrated with infection, the cervix often escaping, the entire uterine cavity is filled with cheesy masses. This enlargement with lack of menstruation has been mistaken for pregnancy. Sometimes ulcerations occur on the cervix and vaginal walls which look very much like lues; another form in which a cauliflower-like mass which is a mass of T. B. tissue, bleeding easily, has been mistaken for carcinoma. The microscope easily furnishes a means for differentiation.

Primary infection of the vagina and vulva are rare but do occur—the mucous membrane and squamous epithelium giving excellent protection. The vaginal ulcer is a flat ulcer with indurated edge slowly extending.

T. B. ulceration, primarily of the vulva, is very rare but Rieck and Viatte report several cases; the ulcers tend to form fistulae, extending up into the vagina; the process presents peculiar clinical features not unlike lues, elephantiasis or rodent ulcer—the microscope again giving the differentiation. The ovaries have never been known to have primary T. B. but of course are involved secondarily.

In prophylaxis—the care as well as the treatment is obvious—I could not find one authenticated report where a tubercular epididemitis was a cause—but there is a possibility. General cleanliness and care in labor, and also greater care in examinations and operations in the vaginal tract being very necessary, is also obvious.

PERSONAL EXPERIENCE WITH CHOLECYSTECTOMY.*

By LEWIS W. ALLEN, M. D., San Francisco.

In responding to the call for a paper before the society, it is my intention this evening to place before you my experiences in gall bladder surgery and my conclusions deduced therefrom. I will not attempt any historical review of the subject as that can be found fully developed elsewhere. So also with the etiology, symptomatology and diagnosis—fascinating as each of these subjects is, it is contrary to the purposes of this paper to enter into their discussion.

Considering therefore that a diagnosis of cholecystitis has been made there arises in the mind of every surgeon several questions:

Which method of treatment will relieve the patient?

Which method will *cure* the disease, as at that time developed, with the least possible risk to the patient?

Which method will not only cure the disease then present, but also give the greatest assurance of *permanent* relief from recurrent attacks as well as from future complications?

Being of a conservative nature, it is my practice to attempt to relieve the symptoms, rather than rush to operation, all cases in the early stages of cholecystitis in which such symptoms show no systemic infection, or at most very mild infective processes. For I have found in some few cases of cholecystitis, as in some cases of appendicitis, with the subsidence of the attack, the administration of liberal doses of olive oil, an increased care in the diet, both as to its character, quantity and time of ingestion, so as to properly meet the needs of the individual, together with the supervision of the bowel elimination, that in relieving the symptoms the disease to all intents and purposes has been cured. The attacks have not recurred and the patient has remained well.

But where the attacks recur with accompanying gastric disturbances, or where the local inflammation progresses to a more and more serious systemic infection, operation is the only method of procedure. There has been a great deal written upon calcareous and non-calcareous cholecystitis, but clinically in determining upon the necessity or non-necessity of an operation it makes little difference whether there are stones present or not. To be sure when a first attack is subsiding and the pain has been distinctly of colicky type we may prophesy, within our own mind, the probability of recurrence. But sometimes it does not recur, and on the other hand some cases of large stones in the cystic duct or within the gall bladder do not give a typical gall bladder colic as some cases of mucous plugs in, or angulation of the cystic duct, do give a typical colic. Therefore, I repeat that, clinically in determining the necessity of an operation, we are only concerned with the *recurrence of the attacks* in the sub-acute and chronic cases, and in the acute cases, with the *progress* of the infection as exhibited in the increase of the local symptoms, the pulse, the temperature, the leukocytosis,

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the dry tongue, the onset of chills, showing a general systemic invasion.

Having decided that an operation is necessary, the choice between a cholecystostomy and a cholecystectomy should, generally speaking, be determined only after entering the abdomen. The judgment and experience of each surgeon will necessarily influence his choice in each individual case in answering the second and third questions as above stated. He must ask himself not only which method will cure the disease as at that time developed, with the least possible risk to the patient, but also which will give the greatest assurance of permanent relief from recurrent attacks as well as from future complications?

Before discussing the arguments for or against the one or the other method of operation, let us first classify the various types of gall bladder disease which may be found on opening the abdomen. Clinically they all fall within the general classification of acute and chronic cholecystitis. In the acute types we have the catarrhal, empyematous and gangrenous, with the possibility of the grave complications of cholangitis and general septic infection, and the lesser ones of pericystic abscesses and pancreatitis. In the chronic types are found all the various changes in the walls of the gall bladder and its relations with the surrounding viscera from moderate thickening of its walls to complete obliteration of the cystic cavity; from stenosis of the cystic duct to complete occlusion; from pericystic adhesions to firm attachment to or ulceration into the neighboring organs.

Trouble in the common duct must necessarily be considered as a separate surgical entity which will influence the surgeon's judgment according as to what condition is found. For simplicity's sake I will omit the discussion of common duct disease in this paper.

Although I am a firm believer in conservative surgery, I come before you tonight as an advocate of the more radical operation of cholecystectomy. My first strong leaning toward the more radical operation came just thirteen years ago, in January 1902, after a cholecystostomy for gangrenous cholecystitis and the autopsy findings following the death of the patient on the eleventh day. As the years passed and I observed the swing of the pendulum from cholecystectomies to cholecystostomies, I have carefully analyzed the arguments of the eminent surgeons in favor of the less radical operation but they were not sufficient, in the light of my own experience, to cause me to change. Many of these arguments for and against cholecystostomy and cholecystectomy can best be impressed by illustrative types while others will be summed up later.

I would not have you understand that I never do a cholecystostomy; that there are no cases cured and relieved, beyond a fairly reasonable doubt of future complications by the less radical operation. Such cases, for instance, are the catarrhal ones operated upon fairly early either for stones or mucous plugs in which the inflammation or obstruction has not been of sufficiently long standing to produce marked changes in the cystic wall, or in the attachment of the wall to the surrounding viscera. It has been my experience, however, that patients seldom submit themselves to operation in these mild cases. Many of these that come under observation are relieved by dietary measures, especially those of the mucous type.

Coming next to the empyematous and gangrenous cases I believe they should be considered together. Not that there are not some purely empyematous cholecystitis and others that are distinctly gangrenous but that many are *both* empyematous and gangrenous. It is often impossible to tell even with the abdomen opened and all previous data in mind, although being sure of an empyema, whether gangrene has developed in the walls or not. The above mentioned case is a sad illustration of this condition. Mr. R—, a physically robust man, in the prime of life, with no previous history of gall bladder disease, was suddenly seized with acute pain in the gall bladder region, followed by such signs of collapse that he was sent the same day to the hospital and operated upon within twenty-four hours of the first pains. The gall bladder was drained as well as an abscess between it and the liver. He was relieved, but the signs of sepsis continued until his death on the eleventh day. Autopsy showed over forty ulcerations of the mucosa with areas of gangrene extending from many of these ulcers into the middle layer one-half inch to one inch in circumference. None of these gangrenous areas were visible upon the surface of the gall bladder. Between the gall bladder and the liver, about one and one-half inches from the end of the abscess opened at the time of operation another ulcer had perforated and pus was found extending in a thick creamy layer around on to the under surface of the left lobe of the liver. A stone the size of a pea had produced the obstruction. Observation at the time of operation could not detect this intermural gangrene, or the perforating ulcer between the gall bladder and the liver far back toward the cystic duct. Drainage was entirely insufficient. Since then I have had several similar cases of multiple ulcerations on the mucosa which, when examined after removal revealed sloughing areas beneath. They have all promptly recovered following a cholecystectomy. Temperatures of 104° and 105° have dropped immediately to 99° and 100° with perhaps a slight rise for a day or two. Pulses of 110 and 120 have dropped to 90, and then lower. The subsidence of the symptoms has always been commensurate with the length of time of the infection. Early radical operation in these severe cases has always been followed in my experience with an equally quick recovery. It has been my fortunate experience to have had no deaths following cholecystectomy. Now, in the swing of the pendulum from cholecystectomy to cholecystostomy some nine or ten years ago most of our writers advocated the drainage operation for empyemas. One reason that I was not convinced that this was the operation of choice was because of my experience in such cases as above illustrated. You can not always be positive that gangrene is not present,

or imminent. If present or prospective, drainage is not sufficient.

On the other hand, take a simple empyema case. Drainage may cure the attack then present and the gall bladder may recover to nearly normal. But is it ever normal? And if it is normal in some cases, is it normal in all? With the numerous folds and trabeculae often present can drainage be implicitly depended upon for removal of all foci of later infection? I am convinced that it cannot. Can it assure us a guarantee against holding some nidus of systemic infection? I am convinced that it cannot. Can we convince ourselves as we palpate a drained gall bladder that no damage has been done to the submucosa sufficient to produce later a stricture of the cystic duct, or at the neck of the gall bladder, even in the presence of the free flow of bile, which will give future trouble? I am convinced that we cannot. In 1905 I presented before this society just such a case. A cholecystostomy had been done for cholelithiasis some months previous. A permanent biliary fistula resulted. There was no colic, no mucus, no common duct symptoms. The stools were normal color. The diagnosis of stricture at the neck of the gall bladder was confirmed by cholecystectomy. A counterpart of this gall bladder with stones intact, one in Hartmann's pouch with a firm stricture and a one-eighth inch lumen leading into the gall bladder, was present in one of my cholecystectomy cases. The former after draining for months needed a second operation; the latter was cured and out of the hospital in thirteen days. The point I wish to make is that it is often impossible by palpation and inspection to determine the amount of damage done, or in what condition the gall bladder tract will be left after repair.

For the out and out gangrenous cases most surgeons have advised cholecystectomy. There have been a few, however, who have claimed better results from drainage even in these cases. Such cases would have to be in extremis indeed before I could be satisfied with drainage, and then only with the expectation of future removal in the event of the very improbable chance of recovery. For in such the gall bladder is left in a badly damaged condition.

In the chronic types of cholecystitis both calcareous and noncalcareous, I am an advocate of cholecystectomy unless one can be positive that the biliary tract is unimpaired and will become normal through drainage. In my opinion such assurance can be held with regard to but few of those cases coming for operation after months or years of trouble.

I admit the choice between cholecystostomy and cholecystectomy in many doubtful cases will depend upon the judgment of the operator as evolved from his experiences and the importance which he gives to certain reasons for and against the one or the other operation. Let us then consider some of the arguments set forth by advocates of cholecystostomy.

First, less danger. I believe that this statement had more weight five years ago than now. Even then it applied only to the old or feeble in whom the margin of safety was very small because in my experience the shock of cholecystectomy is little more than cholecystostomy. The chief shock—the opening of the abdomen—is the same in both. The time of exposure is little different if one goes right at the business of removal. In the bad empyematous and gangrenous cases this is more than counterbalanced by the removal of the large area of septic absorption. Now, however, since it is possible to remove the gall bladder after the injection of morphine and hyoscine by local anesthesia, the margin of safety even in the aged is practically the same. Six years ago I operated on a patient seventy-four years old suffering from suppurative cholecystitis by this method. The omentum was found walling off an abscess containing stones outside the gall bladder. Stones and pus were also removed from the gall bladder, but still no bile flowed, and feeling that in this case I must be sure of immediate biliary drainage I went on and removed the gall bladder. She awakened the next morning and wanted to know when we were going to do the operation. With the more recent introduction of anoci-anesthesia the difference in the shock in the two methods is practically nil.

Second, because it is nature's provision. Because it has important functions, first as a safety valve of the biliary system—acting as the vis-a-tergo of the bile. There is no proof that this is a necessary function except the fact that a compensatory pouch has been found at the site of the amputated cystic duct. This can equally well be taken as evidence that nature is able to renew this function. Even the presence of such a pouch is not proof that such a pouch is necessary to health, but only, that given certain conditions, it will form. Against this argument is the fact that patients who have had their gall bladder removed have remained in perfect health for years. I have yet to experience the fact of a patient upon whom I have performed a cholecystectomy even returning to my office complaining of digestive disturbances. Then again it is asserted that the gall bladder is needed for drainage of the biliary passages. To this I would respond that they can be drained as long as desirable through the stump of the cystic duct, and also with the gall bladder removed, one large factor in the need for such drainage has been removed.

Third, that it is needed for drainage of the pancreas to assist the cure of an accompanying pancreatitis. This statement I have been very much interested in. I have had the biliary discharge from drainage cases examined again and again for evidence of pancreatic secretion. In not a single case has any evidence of pancreatic secretion been found in such fluids. Nor does the skin ever exhibit any signs of excoriations as are found about a pancreatic fistula. With the removal of the gall bladder as the chief focus of infection pancreatitis subsides as quickly as, or even quicker than after cholecystostomy. The other argument that a diseased gall bladder should be saved for the possible treatment of a future pancreatitis is an imposition on one's common sense.

Fourth, gall stones may form later in the common and hepatic ducts. Fortunately this oc-

currence is rare. As W. J. Mayo[1] observes, "I have never seen hepatic duct stones without evidence that the original disease had its source in the infection of the gall bladder or common duct, and the common duct infection was almost always secondary to the gall bladder disease." With the exception of those cases, usually giving histories of common duct obstruction, in which a stone or stones have escaped detection, the removal of the gall bladder as a source of future infection would practically eliminate the formation of such stones.

Fifth, the possible use of the gall bladder in case of chronic and irremediable obstruction of the common duct. This fortunately is rare and there can be no arguments as to the advantage of having a gall bladder present for anastamosis. Yet the operation without the gall bladder though difficult is not impossible. On the other hand, against this rare dilemma, must be placed the many dangers, some very grave, of having a diseased organ intact.

Some of the reasons for the radical operation may be enumerated as follows:

First, fistula, mucous or biliary, either persisting from the time of the cholecystostomy, or developing later, sometimes after a period of two or three years. Although this condition in no way endangers the life of the patient yet it is very annoying both to the patient and to the surgeon. Especially here in the west where most patients must pay at least their hospital expenses it is oftentimes a matter of serious financial embarrassment. Of course this point should not be considered if the life of the patient would be jeopardized by the more radical operation. As I stated above, however, it has been my experience that very few cases indeed would be so jeopardized. The more rapid recovery, the more permanent enjoyment of good health following cholecystectomy has confirmed my early belief in the more radical operation. In favorable cases, especially in the acute cases, the sinus may be allowed to close in five days or a week, and the patient leave the hospital in two weeks all healed.

Second, the infected gall bladder as a nidus of future infection, either locally or systemic. It is claimed, and with truth I believe, that it is almost impossible to thoroughly sterilize all the crypts and folds of a diseased and thickened gall bladder wall. This, of course, depends upon the amount of change that has taken place, but granting that it is thoroughly healed, what guarantee is there that it will not later be reinfected? The greatest difficulty, however, is to be sure that no irremediable condition has been inaugurated in the chronic cases, and in the acute cases just what progress toward such conditions will follow the subsidence of the acute attack. Only experience will tell this, and the swing of the pendulum in the last year or two, which is only now gaining full headway, brings the conviction that led Dr. Crile of Cleveland to state personally to me two years ago that he thought more gall bladders would have to be taken out in the future than had been the custom during the past few years.

Third, the possibility of the development of cancer in a diseased gall bladder, especially following cholelithiasis. In 95% of all cancers of the gall bladder stones are present. Then again, the number of cases of cancer of the gall bladder is variously quoted from 5% to 15%. But most important of all is the fact that those cases in which the cancer is discovered only after the gall bladder has been removed have remained in good health without recurrence or metastasis, while those large enough to be demonstrable at the time of operation have succumbed to the further progress of the disease.

It is not my purpose here to mention all the self-evident conditions requiring the removal of the gall bladder as mentioned in Deaver's[2] conservative article, but to strongly protest against the teaching that only when the gall bladder becomes functionless cholecystectomy should be done. I am firmly of the opinion, as Dr. Lilienthal, in 1904,[3] and again in 1911,[4] has ably concluded, "that, as a rule, any gall bladder which is worth operating on at all for biliary disease may with advantage be removed; that in the majority of cases this removal may be safely accomplished at the primary operation; that when for any reason this procedure appears dangerous, or otherwise undesirable we should look forward to completing the work at a subsequent sitting."

One word as to the technic of the operation. Contrary to the advice of most writers, I have found beginning at the fundus and working down, separating the gall bladder from its attachment to the liver, to be much simpler and easier than the more usual method employed of attempting to tie off the cystic artery first. I have never had any trouble from hemorrhage that a pad under a retractor in the hands of an assistant did not control. Usually such hemorrhage is negligible, especially if the separation is begun slightly to the gall bladder side. With the elevation of the patient into an exaggerated lordosis position after, not before, the abdomen is opened, the gall bladder is brought right up into the wound as the separation progresses, making ligation of the cystic artery and duct very simple and easy. My experience with this method has been so favorable that I have found no reason to change. You attack the parts nearest at hand and gradually bring the deeper structures within easy reach which satisfies the greatest principle of surgery—the surgery of common sense—i. e., seeing what you are doing, or bringing the enemy into the open as Dr. Gerster would put it.

One other point of technic is well worth mentioning. When you find that you must have more room for deeper work do not open downward as is one's first instinct to do, but upward in a curved direction following the border of the ribs which allows the liver to be rotated upward by traction and brings the region of the common duct much nearer to the surface.

References.

1. Journal of the American Medical Association, April 8, 1911.
2. American Journal of Medical Science, Vol. 135, p. 536.
3. Annals of Surgery, July, 1904.
4. N. Y. Medical Journal, July 1, 1911, p. 11.

Discussion.

Dr. J. Rosenstirn. I would not like to let this very interesting paper pass without discussion and

as you call upon me I will take the liberty of making a few remarks. Whilst I would extirpate every empyematous and every shrunken atrophic gall bladder, I would not do so with every bladder that simply contains gall stones. I believe in drainage of the gall bladder. It disinfects not only the gall bladder, but also the bile ducts and the larger biliary ducts of the liver, and often shows its usefulness in cholangitis. We know that infection ascends from the gall bladder into the liver and we know also that the primary cause of the formation of gallstones is an infection with such germs as colon bacilli, typhoid bacilli, etc. The objection against cholecystostomy on account of the possibility of a re-infection of the gall bladder may also be raised in cases of stones of the large bile ducts. We encounter the same conditions in stone of the hepatic, cystic or common ducts, and I doubt very much that Dr. Allen would advocate their extirpation. We drain the choledochus—we do not extirpate the choledochus, and in the many cases of choledochus stone I have operated I have never seen a bad effect from its drainage, and recoveries without recurrence have been the rule. I do not know what induced Dr. Allen to think that the belief claimed for cases of chronic pancreatitis, by drainage of the gall bladder, would show the pancreatic secretion in seepage from the drained bladder. The underlying idea is that pressure from the dilated bile ducts and liver, upon the pancreatic duct, will be relieved through drainage, and that thereby general improvement of the condition will ensue that will greatly relieve secretory retention in the pancreas, which has caused, or largely contributed to, the pathological condition of pancreatitis. With the relief of pressure the pancreatic fluid again is emptied into the duodenum and normal conditions are restored. We all know that chronic pancreatitis has often been mistaken for carcinoma of the pancreas. The gall bladder has been drained, although believing that the patient would die in a short time from the pancreatic disease, and later it has been found that the pathologic condition has subsided. The gall bladder is drained in such cases with good results.

Therefore, I believe that the pendulum will not swing in the direction of general extirpation of the gall bladder, as recommended in the first instance by its originator, Langenbuch, who advocated in the 80's of the last century the operation of cholecystectomy for every case of gall bladder disease. In cases of empyema of the gall bladder, it should be removed without doubt, but to demand this in every case of cholecystitis is, I think, unjustified, and will not, I believe, be generally accepted by the profession. The method of extirpating the gall bladder by commencing at the fundus is the old method as recommended by Langenbuch and also practiced by Kehrer, and I therefore cannot agree to its original recommendation being claimed for Dr. Lilienthal.

Dr. F. W. Birtch: I am convinced that in a large measure Dr. Allen's report contains the essence of biliary duct surgery as taught today. Gall bladder surgery has undergone many changes in the last few years. Not many years ago it was advocated to suture a tube in the gall bladder and then plaster the gall bladder tightly against the abdominal wall as a routine measure. This method gave way to suturing a tube in the gall bladder and then dropping the viscus back into its normal position. However, neither of these methods, as shown by subsequent case histories, completely relieves the patient. Surgeons all over the world came to realize that these methods were not yielding the desired results. This condition of affairs brought forth a flood of papers recommending cholecystectomy; but before we should recommend the routine removal of gall bladders we must ask ourselves: first, what is the function of the gall bladder? second, what metabolic influence the removal of this organ has on the individual, and third, what effect it has on digestion. Rost demonstrated that after cholecystectomy the bile first drops continuously into the duodenum but eventually there comes an intermittent emptying just as occurs when the gall bladder is intact. He also emphasized the fact that after cholecystectomy the biliary ducts may become much dilated, and that the stump of the cystic duct may become so large that it functionally serves as a new gall bladder. He explains the dilatation of the ducts on the ground that the sphincter of the papilla is strong enough to hold back the bile until it accumulates sufficiently to stretch the ducts. As far as metabolism is concerned, it is likely that the removal of the gall bladder has no effect on the individual. The loss of the gall bladder in many cases seems to disturb the digestion and this is probably due to the change in the manner in which the bile is emptied into the intestines. As far as the gross lesions of the gall bladder are concerned, such as hydrops of the gall bladder, empyema of the gall bladder, contracted gall bladder, perforated gall bladder, and gangrene of the gall bladder, most surgeons are of the opinion that the viscus should be removed.

Dr. Allen spoke of a small abscess which formed on the liver side of the cystic duct in his case. The cystic duct has very thin walls and perforations are much more common here than through the common duct. However, the cystic duct seldom perforates into the free abdominal cavity, but usually ruptures on the liver side as in Dr. Allen's case.

There are some interesting statistics on the mortality of biliary duct surgery which may not be out of place in this discussion. In simply opening the gall bladder the mortality is almost nil. When the gall bladder is drained in cases where the disease is still confined to the gall the mortality is about 1%. If the cystic duct is involved the mortality is about 2%. When the infection has extended into the common duct the mortality is 8%, varying from 3% in simple cases to 25% in obstructed cases. When malignant disease is present the mortality is as high as 70% or 80%.

The question of cholecystotomy or cholecystectomy is settled when the surgeon is able to recognize the pathology of the gall bladder at the operating table. If a gall bladder will return to normal, then drainage should be the operation of choice. If the gallbladder will not return to normal, then it should be removed. The point is that we must be able to recognize how badly the gall bladder is diseased in order to know how to treat it.

Dr. Allen, closing discussion: I do not want you to think that I remove every gall bladder. In regard to drainage the point wants to be considered that you might not need your drainage if you remove the infected gall bladder; your chief source of infection is gone. Then again, removal of the gall bladder does not prevent you from draining the common duct as long as it seems necessary.

The other point, that the disease is more serious as it progresses down from the gall bladder to the cystic and common duct, applies not to the operation, in my experience, but only to the character of and seriousness of the infection. The only deaths I have had were cases I have drained; like the one mentioned tonight that might have been alive today. Another death after drainage had an accompanying gangrene of the pancreas. Another had suppression of the urine on the second day. In a similar case recently, as to the age of the patient and seriousness of the infection, a cholecystectomy was done under local anesthesia; the woman's urine showed no signs of albumen the day before; slight on the day following; and on the same day, without any warning came down to ten ounces with the alarming signs of coma. If this

patient had been operated upon under ether I'm sure she would have been lost.

Of course, the main thing is the judgment of the surgeon as to the best operation for each case. But I think the argument that it is more serious to do cholecystectomy than cholecystostomy is wrong, especially when you consider the fact that when you remove the infected gall bladder you remove the main source of infection. You will find that both your immediate and your ultimate results will be better.

FISCHER'S THEORY OF EDEMA.

The recent publication of the second edition of Dr. Martin Fischer's work—and the trenchant criticism of Dr. Addis thereon—accentuates my interest in the subject, and if anything, strengthens the opinions I expressed in my review of the first edition written for this JOURNAL (November 1910, page 380).

No one who has repeated experimentally Fischer's work on the behavior of protein colloids can doubt the inevitable absorption and rejection of water under conditions frequently present in living bodies; but when we note the distribution of water in disease, its excessive presence in loose tissues of low specific gravity such as the subdermal, as against organs such as the liver, it seems as though mere weight of what is *assumed to be* protein colloid does not regulate the water absorbtion in an edematous area. Doubtless various reasons could be adduced in explanation but there is one possibility, which so far as I know has not been brought forward in this discussion which may indeed be the determining factor in this and other pathological conditions, namely, that the living protoplasm may be neither chemically protein or physically colloid. It is to be remembered that we know practically nothing of the static chemistry of life; all experimentation means chemical change and the appearance of non-living substance (Paraplasm). It is quite impossible to determine whether reactions so occurring are the product of the newly formed paraplasm or associated living protoplasm. Reactions whereby we determine that a given substance is a protein cannot be applied to the contents of a living cell and if they could, and positive reactions followed, we still would be unable to state that it was the living protoplasm and not the associated paraplasm that was reacting. This fact is implicit in Adami's designation of protoplasm as "proteidogenous matter." We must look on every living tissue, and cell, as made of protoplasm, and formed matter (ground substance in histology, paraplasm cytologically). On the occurrence of death the former becomes the latter and does so progressively in the act of dying.

I wish now to submit the thesis that the principles involved in Dr. Martin Fischer's theory probably apply only to the formed matter of cells and tissues. As all living tissues contain an abundance of such formed matter, in very varying amounts according to location and condition, we would still have abundant scope for these colloidal activities, without expecting them to be uniform in their incidence. It would explain why cellular tissues with the preponderance of ground substance are more prone to edema than muscles; why the lung is more affected than the liver; also why dying organs and cells with protoplasm passing into paraplasm increasingly absorb water.

While I advance this contention on theoretical grounds, I believe the problem is open to experimental proof, by direct observation of the behavior of living cells and tissues containing varying proportions of protoplasm and ground substance, when submitted to the influences inducing water absorption or rejection. Such work would be arduous, but almost certainly fruitful. I trust that some of my colleagues with more time and facilities for cytological research may undertake it, and I would gladly co-operate to the extent of my time and ability.

H. D'ARCY POWER.

PAN-AMERICAN MEDICAL CONGRESS.

Pursuant to an invitation by the President of the United States, authorized by act of Congress approved the third of March, 1915, the Seventh Pan-American Medical Congress convened in San Francisco on the seventeenth of June of this year. Owing to the short time between the authorization of the medical congress by the national Congress, a smaller attendance than was desired was realized, but in spite of the short time Argentina, Brazil, Cuba, Guatemala, Panama, Peru, Salvador and Venezuela were ably represented by delegates in person, and not a few who could not attend contributed to the support of the meeting by dues and by writing and submitting papers. The object of this special congress is, succinctly: (1) To promote personal and fraternal relations between the members of the medical profession of the Western Hemisphere; (2) To make the medical profession of each country more familiar with the educational, scientific and other medical resources of all the other American countries; (3) To consider problems of sanitation and public health administration of both national and international importance to the countries and colonies concerned; (4) To promote the development of periodical and other medical literature best calculated to promote the interchange of thought, as well as practical scientific co-operation by and between an All-American Medical Profession; (5) To cultivate the medical sciences.

In all of these the present meeting carried matters a certain distance forward. Certainly those Anglo-Americans who became well acquainted with Demaria of Argentina, Ramos and Roche Vaz of Brazil, Arteaga and Pons and Placeres of Cuba, Morales of Peru, Leiva of Salvador, Risquez of Venezuela, as well as those representatives of Guatemala who now, during the Exposition, are residents of San Francisco, feel that they have gained personal friends and have learned much of the status of medical education and of the hospital situations in the countries represented. The major proposition of the congress is, of course, the adequate consideration of national and international health problems, and in this the gain lay in the proceedings of the Section on Preventive Medicine and Public Health, under the Chair-

manship of Senior Surgeon C. C. Pierce, of the United States Public Health Service. The papers presented and the discussions on them were in all respects satisfactory, and fully compensated for the smaller showing of the International Consular Symposium on "The Relation of the Consular Services to Pan-American Health Problems," which had been arranged for, but for which there was not, confessedly, adequate time for preparation.

The Section on General Medicine, under the Chairmanship of Dr. John L. Dawson of Charleston, S. C., and the Vice Chairmanship of Dr. Philip King Brown of San Francisco, had a very full programme of titles, mostly by Latin-Americans who were not present; but two good sessions were held. Surgery, which included Orthopedics, Urology, and Military Surgery, under the Chairmanship of Dr. Wallace I. Terry, had a full program, which was well carried out. In the absence of their regularly appointed Chairmen, the Section on Laryngology, Rhinology, Ophthalmology and Otology was presided over by Dr. Kaspar Pischel of San Francisco, and that on Obstetrics and Gynecology by Dr. S. H. Buteau of Oakland. In the Section on Anatomy, Physiology, Bacteriology and Pathology, with Dr. Martin H. Fischer of Cincinnati, Chairman, there were but three English papers, out of a total of eighteen presented—fifteen being in Spanish or Portuguese.

The Address of the President, Dr. Charles A. L. Reed, of Cincinnati, on "The Relation of the Medical Profession to the Practical Pan-Americanism of the Twentieth Century," was a notable paper, of value as a state document because of its breadth and depth of vision, its prescience, and its classical form. It was presented at an evening session, to which the foreign delegates were welcomed by an address in Spanish by Dr. D. W. Montgomery of San Francisco.

Following the adjournment of the American Medical Association, at which meeting the special delegates and other attendants of the Pan-American Medical Congress were guests, the foreign congressors and the officers of the congress were sent on a journey on which the foreign delegates were the guests of, and the officers were the hosts for, the State Department. This journey was under the charge of Dr. H. L. E. Johnson, of Washington, the special representative of the State Department; it was made in special cars and diners, and extended from San Francisco to San Diego, the Grand Canyon of the Colorado, the Yosemite Valley, with stops at Del Monte, Santa Barbara, Los Angeles and Wawona and back to San Francisco. At Wawona the Latin Americans became the hosts for an evening and celebrated the 4th of July, the first of the birthdays of republicanism in the Western Hemisphere. The whole journey was admirably planned and perfectly managed and contributed more than anything to the development of friendly relations and knowledge of each other between the visitors and the hosts.

The first of these congresses was held in Washington in 1893, under the Presidency of the late Dr. William Pepper. Since this, others have been held in Mexico, Cuba, Panama, Guatemala and Peru. The return to the United States for the seventh was most appropriately under the Presidency of Dr. Charles A. L. Reed, for he had been the original suggestor of the movement. Argentina, it is hoped, will issue the call for the eighth, which should be held in 1918.

That this particular congress has a peculiar duty to the peoples of North and South America is obvious; that this duty can be discharged by none others than members of the medical profession is manifest; that medicine will not fail can be predicted, for it never has failed, and is less likely to do so now than ever before. "The noblest study of mankind is man," and the greatest duty is "the care and nurture of men," and this in effect is the function of medicine for the State, for the Home, and for the Generations.

NOTICE

To the California State Journal of Medicine:

Greetings from the Spanish-American War Nurses and a cordial invitation to its members to attend the reception held in San Francisco on August 12, "Spanish-American War Nurses Day" at the P.-P. I. E.

The afternoon reception is to be held in the California Building, Exposition Grounds, from 2 to 5 p. m., and is tendered the members of the S. A. W. N. and their friends by the Woman's Board of the Directors of the Exposition.

The evening reception at Hotel Sutter from 8:30 to 11:30 is given by the S. A. W. N. to their friends and all members of the medical profession and members of the various military and patriotic societies, and especially to those surgeons and physicians who saw service during the Spanish-American war.

BOOK REVIEWS

The Chemical Examination of Water, Sewage and Foods. By G. S. Graham-Smith, M. D., and J. E. Purvis, M. A. Cambridge at the University Press, 1914. 9/- net.

This volume is one of a series dealing with subjects of interest to those connected with Public Health Departments and the Medical Profession in General.

Being comprehensive, it is of a necessity, brief, yet its scope will appeal to other workers in chemistry who are interested in the subjects considered.

The thirteen chapters on the subjects of: Water, Sewage, Milk, Cream, Condensed Milk, Butter, Edible Fats and Oils, Cheese, Tea, Coffee, Cocoa, Chicory, Flour, Bread, Starches, Pepper and Other Spices, Sugar and Sugar Products, Alcoholic Beverages, Liquors, Vinegar, Fruit Juices, Poisonous Metals in Foods, Preservatives, Air, Gases, and Urine.

A bibliography follows each subject. Typical analyses are given of various foods, which are valuable to the chemist, particularly so where they are, as in this instance, authoritative. It contains much data and methods of value to the analyst. The methods of analysis are those used in Great Britain and the Continent, so that many could not be used by the American food chemist. The methods of analysis on sugar are particu-

larly open to criticism for the use of a practical food analyst.

The book is clearly printed and the subject matter can be readily understood by those who are not deeply versed in chemical processes.

It is of service to the student, teacher and doctor, and would find a welcome place in the library of any food chemist. E. C. N.

General Surgery. Practical Medicine Series, Vol. II. Edited by John B. Murphy. Series of 1915. Yearbook Publishing Co., Chicago. 1915.

While, as might be anticipated, this volume is strongly marked with the personality of the editor, it has the quality of containing all of the most vital and practical material on surgical subjects that appears in the current medical literature. There is a very gratifying decision and emphasis employed in the exposition of the material that serves well to arrest the casual reader's attention or to impress the one who seeks information as in a reference work. The chapters on operative technic, bone grafting and appendicitis are particularly well worth reading. G. H. T.

A Text-Book of Diseases of the Nose and Throat. By D. Braden Kyle, A. M., M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fifth edition, thoroughly revised and enlarged. Octavo of 856 pages with 272 illustrations, 27 of them in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, $4.50 net.

This work has attempted to discuss diseases of the nose and throat from the pathological standpoint and with a large measure of success. Pathology is the basis of any intelligent understanding or treatment of disease, and Dr. Kyle is to be congratulated in that he has brought this feature so prominently to the front in his book. It will not militate against the usefulness of the work that there are some points that might be improved on. As an instance of this may be cited the great amount of space taken up with operations on the septum, most of which have been discarded. However, it is probably too much to expect of an author that he should omit all archaic material otherwise we should have pamphlets instead of books. It is a sound and safe book to give to students and ought to encourage them to a good understanding of pathology, which I take it, is its chief aim. H. Y. McN.

Essentials of Laboratory Diagnosis—Designed for Students and Practitioners. By Francis Ashley Faught, M.D., Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., etc., Philadelphia, Pa. Pp. 450 containing 10 full-page plates (4 in color) and 58 text engravings. Fifth Revised Edition. Price, $2.50 net. 1915. F. A. Davis Company, Publishers, Philadelphia. English Depot, Stanley Philips, London.

This volume contains a brief description of the routine tests employed in the clinical laboratory. It should prove especially valuable both to students and to those physicians who wish to acquaint themselves with a good working method for carrying out the commoner laboratory reactions. The more modern and reliable tests are described while the elimination of much of the complex matter found in larger works makes the book concise without the loss of any of the essentials.

It is to be highly recommended as a compact but not too brief outline of every-day laboratory methods. C. S.

Infant Feeding, Its Principles and Practice. By F. L. Wachenheim, M. D., Attending Physician Sydenham Hospital and Mount Sinai Dispensary, New York City. 12mo, 340 pages. Cloth, $2.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This is a review of the several methods of infant feeding and a consideration of a few disorders associated with nutrition. The work is commendable as well for its brevity as for the definite information it contains. It could have been made still shorter without detracting from its merit. The keynote of the book is found on page 242, where the author comments on the "superiority of bedside observation over uncontrolled laboratory research and mere reverence for authority," and again on page 184 where in discussing the various systems of feeding he states that "The confusion referred to gives an accurate picture of the present situation: a system of artificial feeding that really meets the requirements is still awaiting discovery." Wachenheim handles the various feeding systems with authority. He points out their strong and their weak points. He almost states a principle when he says (pages 46-47), "The idea that different metabolic and nutritional results can be obtained from a definite caloric food-estimation has been and will probably remain chimerical." The tables he furnishes for practical use—such as the quantitative table (page 19) are admirable. His discussion of digestive disorders, the disorders of metabolism, rickets and scurvy are good. The book is written in a scholarly manner. It can be read with profit and should be appreciated by the practicing physician.

SANFORD BLUM.

Pathological Technique: A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, A. M., M. D., and J. H. Wright, A. M., M. D., S. D. Sixth Edition, Revised and Enlarged with 174 Illustrations. Published by W. B. Saunders Co., Philadelphia and London, 1915.

No comment need be made upon the text and illustrations of the previous editions of "Pathological Technique," since its acceptance years ago as a standard work on autopsy technique and histological tissue preparation. In the sixth edition the authors have incorporated in the original text some sections on bacteriology and serology descriptive of the bacillus of pertussis, Blastomyces and Sporothrix schenckii; complement fixation in gonococcal infection and echinococcic cyst, and Lange's colloidal gold reaction in cerebrospinal fluid for syphilis of the central nervous system. Several additions to histological technique have been made, viz., Eyenes' and Sternberg's silver impregnation tissue method for staining the Treponema pallidum; Bielschowsky's silver impregnation stain for nerve fibres, connective tissue fibrils and reticulum; Bensley's stain for mitochondria; Herxheimer's alcohol-acetone solution of Scharlach R stain for fat. The staining methods are new and have been found valuable to the histologist. In the earlier editions no attempt was made to pub-

lish an exhaustive work and this edition evinces the wishes of the authors in publishing those histological methods which have been thoroughly tried out and found to be of material assistance to the laboratory worker, rather than in publishing an exhaustive treatise in which it is more difficult to choose the best. This book should have a place in every laboratory. W. T. C.

A Practical Text-Book of Infection, Immunity and Specific Therapy, with special reference to immunologic technic. By John A. Kolmer, M. D., Dr. P. H., Instructor of Experimental Pathology, University of Pennsylvania, with an introduction by Allen J. Smith, M. D., Professor of Pathology, University of Pennsylvania. Octavo of 899 pages with 143 original illustrations, 43 in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net. Half morocco, $7.50 net.

The world wide, searching studies of the past ten years on the subjects of the title of this work, are creating a new era in medicine, both preventive and curative, and unless the practitioner as well as the public health man keep very wide awake, they will find themselves left behind with theories and methods that belong to the yesterdays.

This work by Dr. Kolmer of Philadelphia will, for a period, be indispensable in the laboratory because of its accessible and clear information on the methods followed in to-day serum work; it should be in the hands of every man who is not thoroughly familiar with the theories underlying all serum work, or the methods of preparing his immunizing and curative sera.

It will in all probability be recommended by teachers to their students because of the great care taken in the presentation of the subjects and the inclusion of a course in experimental infection and immunity.

The work is well illustrated, all important reactions, whether in vitro or in vivo, being shown in colors. G. M. C.

Ten Sex Talks to Girls 14 Years and Older. By J. D. Steinhardt, M. D. 193 pages. 12 mo. Illustrated. J. B. Lippincott Co., Philadelphia and London, Publishers. Price, $1.00.

In last year's number of this Journal (Oct., 1914, p. 431) we reviewed a similar book of the same author, viz., "Ten Sex Talks for Boys." The present lectures are for the information of girls, and dedicated to "our grandmothers, our mothers, our wives, our sisters and our daughters, in the hope that all of them will find both profit and pleasure in the knowledge its pages impart."

The book also contains a very sensible commendatory introduction by Rachelle S. Yarros, M. D., chairman of Social Hygiene of General Federation of Women's Clubs.

The first lecture occupies itself with the anatomy of the external and internal sexual organs.

The second talks of the physiology of menstruation and gives the three more common causes for its disturbance—constipation, retention of urine and tight lacing.

The third treats of hemorrhoids and their causes, the evil effects of constipation and measures for regular evacuation of the bowels; also of the effects of undue retention of urine upon the bladder.

Leucorrhea forms the next part and the observance of cleanliness during the menstrual period.

After a condemnation of the general run of corsets, masturbation is finally discussed with all the usual recount of evils due to its practice and advice given by the author how to avoid the rousing of sexual desire.

The fourth and fifth chapters tell of venereal diseases, their ravages among those afflicted with them and their disastrous influence upon the offspring. The latter is illustrated by some very gruesome pictures.

The author proposes, as the best means of protection against the invasion of venereal diseases into the household, a strict demand for purity and continence of those men to whom the privilege of an acquaintance with the young ladies, and entrée to their families is granted, but fails to indicate the manner of ascertaining the concession of such demands.

In the sixth chapter the beneficial influence of the mingling of the sexes for both is accentuated; indiscriminate kissing is adjudged to be leading to immorality, and a warning is issued against immodest actions and forms of dress, as well as drinking.

Marriage, the favorite topic of the sex, is fully discussed in the seventh chapter. The essentials to a happy marriage are presented to the reader, the advantages and dangers of early marriages are carefully balanced, and the qualities a girl should look for in the man of her choice fully explained. The duties of wifehood however are not forgotten, and the prospective bride is admonished not to neglect her part in making the matrimonial venture a success.

Motherhood in its expectancy and its fulfilment are the subjects of the eighth chapter, and rational measures are recommended for the sanitary needs involved.

Regulations for the management of the child from its birth are given in the ninth and tenth chapters. They are reasonably complete but the author omitted to call special attention to the importance also of prenatal care. A brief mention of the menopause, its meaning and importance as well as some precautions necessary during its course, closes the talks.

The book may well be recommended as a sane and safe counselor for mothers to help them shape their advisory instructions to their daughters and have them read it when they enter the sexual phase of their lives. J. R.

The Gynecology of Obstetrics. An Exposition of the Pathology Bearing Directly on Parturition. Published by the Macmillan Co., New York, 1915.

A very interesting, instructive book! and a novelty: We are used to speak of obstetrics **and** gynecology—but here the interdependence of the one from the other is denoted and emphasized through the very title of the book.

The book treats the whole field of injuries brought about by the act of delivery. In the first chapter, Anatomy of the Cervix and Perineum, a clear description of the structures is given, based upon original dissections with very instructive microscopic illustrations; the (colored) macroscopic reproductions are unfortunately small, but they have the advantage of being reproductions of nature and not schematic drawings. It would be such a material aid to study if the plates could be enlarged in the next edition of the book.

In Mechanics of the Relaxed Outlet this somewhat complex topic is admirably handled.

In Etiology and Prevention of Lacerations, sensible views are expressed; the author though, should have insisted that wherever great probability of a real cervical tear exists (forceps delivery, where the undilated ring is carried down; version and extraction) an inspection of the cervix should always be made. In the chapter on Pathology of the Cervix possibly too great importance is given to mechanical influences as producing pathologic

changes; the reproductions of microscopic findings are very instructive.

In Symptoms of Cervical Pathology; Treatment of Cervical Pathology; Curettage, extremely sound, conservative views are expressed.

In Immediate Repairs one fails to find recommendation of a retractor to diagnose the extent of a perineal laceration; if a retractor is used there is no difficulty to determine their extensiveness. The discussion on immediate repair is a trifle narrow; this in striking contrast with the excellent, broad treatment of perineorraphy. "Tears" are so common in the delivery of a woman, the methods of immediate suture are so multiple; but the surgical necessity common to all of them is a good sweeping grasp of the sides of the wound and avoidance of all dead spaces in the wound.

In Symptoms and Diagnosis of the Relaxed Vaginal Outlet excellent advice is given for physical examination and discovery of defects. The variation of complaints, their uncertain character is properly exposed; but the theory of reflex action, such as eye strain, melancholia, hysteria "by no means uncommon" and "almost any type of nervous phenomena" as due to relaxation of pelvic outlet cannot be accepted.

The chapters on Perineorrhaphy and Cystócele deserves a special careful reading. A broad general exposition of the underlying principles is given; the fundamental work of Tait, Emmet and Hegar is described and it is left to every operator to work out his method; no detailed descriptions of any method is made, this is left to the regular textbooks; the modern technic of denudation or rather dissection and the necessity of union of muscle and fascia is clearly shown.

In the chapters on Post-operative Treatment, Prognosis and Post-operative Complication and Miscarriage and Sterility, sane modern ideas are expounded, recommending freedom of motion and absence of harmful polypragmasie. One misses the application of a codein suppository, such a relief! And the recommendation of exercise after Thure Brand.

In Bladder Infections many a fine observation is made and with Kidney Ptosis an extremely interesting study is added.

The book shows everywhere the author's sound judgment of an experienced obstetrician and gynecologist; his skill with the dissecting scalpel and the miscroscope; his comprehensive knowledge of literature, even if his citations are inclined to favor home products.

The author is a member of the California profession and this book is a credit to the profession of the Golden State. H. J. K.

SOCIETY REPORTS

LOS ANGELES COUNTY.

Meeting of the Eye and Ear Section of the Los Angeles County Medical Association was held at the office of Dr. J. J. Kyle, 702 Title & Trust Bldg., May 3, 1915.

Attendance.

Drs. J. M. Brown, Dudley, Hastings, Harris, Lund, McCauley, G. W.; Miller, R. W.; Montgomery, Roberts, Stivers, Sweet, Detling, Reynolds, Graham, Kyle, Griffith, Leffler and Kress.

Visitor: Dr. Swetnam.

Dr. Stivers read his paper entitled "The Modern Treatment of Stammering and Lisping," illustrated by two cases; one of which, a girl of 12, had been considered feeble-minded up to the time of making the diagnosis of speech defect, when she was put under regular treatment and has since made remarkable progress both in speech and in school standing.

The second case was one of lisping in a child of 10, which has fully recovered. The girl recited a stanza of Longfellow's poem "The Village Blacksmith."

Discussion was by Drs. Sweet, Montgomery, Roberts, Hastings and R. W. Miller.

On report of roll call the following reported cases:

Dr. Dudley—Kerato-conus in a girl.

Dr. Harris—Case of child showing ability to turn the left eyeball either inward or outward. Vision in the left eye is 6/9 with glasses. The correction is ½ Diopter Hyper-astigmatism axis 90.

Second case Albuminuric Retinitis—a perfect picture of the fundus in this condition. Man, carpenter, was obliged to quit work. His vision is 6/12 minus—with glasses 6/9, he has lost 1 diopter in vision. The urine is full of albumen and casts.

Dr. Geo. W. McCoy voiced a word of protest against too early operation in squint in children.

Dr. Dudley said that it makes a difference what the condition of the child is in regard to the squint. If the faculty of vision is not lost after operation there will be no deviation. The amount of vision is of great importance. In the very young, in making the diagnosis, he recognizes the use of white balls rolled in front of the patient.

Dr. G. W. McCoy reported a case of unusual interest in a man showing bulging eyeball, temperature and leuco cystosis. There was paralysis of the 3d, 4th, 5th and 6th nerves. No headaches, no specific history, and the eye showed a picture of pan-opthalnitis. Dr. Kyle suggested it might be due to internal brain condition. Dr. Hastings was of the opinion it was a lesion further back in the brain on account of the involvement of the 5th nerve.

Dr. Leffler reported a case of neuro retinitis with detachment of retina, and exhibited the patient.

C. G. STIVERS, Secretary.

Regular meeting of the Eye and Ear Section of the Los Angeles County Medical Association was held in the offices of Dr. G. J. Lund, Auditorium Building, June 7, 1915. Those present were:

Drs. F. D. Bullard, J. M. Brown, Dudley, Dilworth, Fleming, Hastings, Kiefer, Kelsey, Lund, G. W. McCoy, Roberts, Reed, Stivers, Sweet, Stephenson, True, Detling, Reynolds, Kyle, Griffith, Leffler, Kress, and Old.

Visitors: Drs. Swetnam and Walker.

Minutes of previous meeting read and approved.

Dr. H. M. Griffith read his paper entitled "Important Steps in the Operation for the Correction of Septal Deformities and Methods Used in Overcoming Difficulties Encountered in 130 Sub-Mucous Resections." Dr. Griffith showed numerous pieces of bone removed in these operations.

Discussion was by Drs. Kyle and Stivers, Fleming, Detling and McCoy.

Dr. Stephenson showed a case of a boy who had been operated for removal of tonsils and adenoid, and cautery of turbinals, and still presented a blocked nose.

Dr. Stivers exhibited four cases—two of submucous resection, one of congenital absence of auditory canal, and one of a case of acute swelling in the thyroid region, painful to pressure, history of having come since May 24. There is no tonsil or adenoid infection.

Dr. Kress presented a resolution to amend the By-Laws in regard to the method of election of members. On motion, it was ordered to be brought up for discussion at the next regular meeting.

C. G. STIVERS, Secretary.

ORANGE COUNTY.

At a good attendance of the members of the Orange County Medical Association Dr. Walter V. Brem presented an interesting and very instructive paper, "Vaccine and Serum Therapy," at our regular July meeting. After a general discussion the members partook of a light lunch.

R. A. CUSHMAN, Secretary.

PLACER COUNTY.

The regular meeting of the Placer County Medical Society was held Saturday evening, June 12, at the Auburn Sanatorium, East Auburn. The following members and visitors were present: Drs. H. T. Rooney, R. F. Rooney, Allen, McCullough, Mackay, Fay, Couture, Miner, James, Force and Peers.

The election of Drs. Wm. F. Jordon, Floriston; E. E. Ostrom, Loomis, and Henry N. Miner, Colfax, to membership in the Society, was confirmed by vote.

Drs. H. T. Rooney, Fay, Mackay, Allen and Peers were appointed a "Committee on Red Cross Work."

Dr. Mackay presented a patient 87 years of age upon whom he had operated successfully on May 30 because of acute appendicitis.

Drs. Rooney, Fay and Allen reported interesting and unusual cases recently under their care.

Dr. J. W. James, Sacramento, read a paper entitled "Perineal Repair." Discussed by Drs. Fay, Mackay, R. F. Rooney, Couture, McCullough, Force, Miner, Allen, H. T. Rooney and R. F. Rooney.

Dr. John N. Force, University of California, then presented a paper, "The How and Why of Vaccination," accompanied by photographs and exhibits. Discussed by all members present.

After adjournment the members partook of a banquet furnished by the Superintendent and Nurses of the Sanatorium.

The Placer County Medical Society will hold meetings every month until the bad weather of winter makes traveling difficult in that section of the state. At the July meeting Dr. Ebright of San Francisco and Dr. Gundrum of Sacramento were scheduled to present papers. As the meetings occur so late in the month it is not possible to get the reports of the meetings in the issue of the Journal immediately following each meeting.

It is announced, however, that the August meeting will have two very fine surgical papers, and it is hoped that it will have a large attendance.

ROBERT A. PEERS, Secretary.

SACRAMENTO COUNTY.

Regular meeting, June 15th, at the Hotel Sacramento, at 8:30 p. m. President J. B. Harris presiding.

Subject of the meeting was Tuberculosis. Various phases of the problem of tuberculosis were taken up by the different members of the society in the form of a symposium. Each speaker was allowed 15 minutes.

First paper was "Early Diagnosis in Pulmonary Tuberculosis," by R. A. Peers, M. D., of Colfax.

Second paper, "Climatology in the Treatment of Tuberculosis," by B. F. Howard, M. D., of Sacramento.

Third paper, "Tuberculosis of the Female Genitalia," by J. W. James, M. D., of Sacramento.

Fourth paper, "The Relation of Certain Urinary Findings to Prognosis in Pulmonary Tuberculosis," by J. C. Cummings, M. D., of Sacramento.

On account of illness Dr. Cummings was unable to read his paper, which was presented to the society by the secretary.

The discussion was opened by Dr. Williamson, City Health Officer, subject, "Relation of Housing Conditions in Sacramento to Certain Phases of the Local Tuberculosis Problem."

The application of Dr. Blake Franklin of Jackson, Amador County, was read.

Adjourned at 11 p. m.

F. F. GUNDRUM, M. D.,
Secretary-Treasurer.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held Friday evening, May 28th, at the office of Dr. C. F. English. Those present were: Drs. R. T. McGurk, J. T. Davison, L. Dozier, G. W. Walker, E. A. Arthur, W. W. Fitzgerald, F. P. Clark, Minerva Goodman, J. D. Dameron, Mary Taylor, C. R. Harry, C. F. English, H. J. Bolinger, W. F. Priestly, J. V. Craviotto, S. P. Tuggle and Dewey R. Powell, with Dr. H. E. Ruggles, of San Francisco, as guest.

The program committee stated that they were endeavoring to secure some distinguished eastern visitor for our June meeting, which comes at the close of the A. M. A. meeting in San Francisco.

The discussion of the evening was given by Dr. Ruggles of San Francisco on "X-Ray Diagnosis," illustrated by many interesting and instructive plates, particularly gastro intestinal and chest plates. After general discussion, a social hour was enjoyed.

DEWEY R. POWELL, Secretary.

SOLANO COUNTY.

On May 10, 1915, the Solano County Medical Society met and elected to membership Dr. Francis Stolle by transfer from Marin County.

The following officers were elected for the ensuing year: President, Dr. E. A. Peterson; vice-president, Dr. Jas. Brownlie; secretary-treasurer, Dr. Paul H. Reilly; delegate, Dr. B. J. Klotz; alternate, Dr. Ream S. Leachman.

PAUL H. REILLY, Secretary.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Cephaeline.—An alkaloid obtained from ipecac. It is relatively more emetic and less nauseant than ipecac and causes more renal irritation and less cardiac depression. It may be used as an emetic and expectorant. It is insoluble in water, but forms water soluble salts.

Syrup Cephaeline, Lilly.—A non-proprietary preparation containing cephaeline hydrochloride, equivalent to 2/5 grain cephaeline per fluidounce. Eli Lilly Co., Indianapolis, Ind. (Jour. A. M. A., June 19, 1915, p. 20667).

Ouabain Ampules, H. W. & Co.—Each ampule contains 0.5 mg. crystallized ouabain. Hynson, Westcott & Co., Baltimore, Md. (Jour. A. M. A., June 19, 1915, p. 2067).

Items of Interest.

Typhoid Vaccine.—Extensive clinical trial indicates that typhoid vaccine may influence the course of the disease favorably. The results indicate that

if used with discretion, typhoid vaccines do no harm (Jour. A. M. A., June 26, 1915, p. 2139).

Rheumalgine.—Rheumalgine (Eli Lilly & Co., Indianapolis) is put up both in tablet form and as a liquid. Each tablet, or teaspoonful of the liquid, is said to contain: "Strontium salicylate from Natural Oil 5 gr., Hexamethylenamin 2 gr., Colchicine 1/200 gr." The Council on Pharmacy and Chemistry found Rheumalgine in conflict with its rules in that unwarranted therapeutic claims were made because the combination is conducive to uncritical prescribing and because the name, being non-descriptive of its composition, encourages thoughtless use (Jour. A. M. A., June 26, 1915, p. 2156).

Intravenous Radium Solution.—Standard Radium Solution for intravenous use (Radium Chemical Co., Pittsburgh) is sold in ampules, each containing radium bromide equivalent to 0.05 mgm. radium element and 0.0002 Gm. or less of barium bromide dissolved in 2 Cc. sterile normal salt solution. While the Council on Pharmacy and Chemistry confirmed the claimed composition of this solution so far as concerns the radium content, it refused recognition to the preparation because there is no clear evidence that intravenous injection has any advantage over the other methods of administering radium. The Council holds that on the basis of our present knowledge radium should be used intravenously only by those in a position to study its effects carefully and in an institution equipped with the necessary facilities for such study (Jour. A. M. A., June 26, 1915, p. 213).

Venodine.—Venodine (The Intravenous Products Co., Denver) was stated to be "an Intravenous Iodine Compound" put up in ampules, each of which contains "28 grains of Sodium Iodide, 1/8 grain each of Beechwood Creosote and Guaiacol in a suitable vehicle, and excipients to enhance its compatibility with the circulating blood." The "Therapeutic Indications" were said to include "infectious diseases, such as syphilis, tuberculosis, bronchitis, bacteraemias associated with chronic and acute nephritic (Bright's disease), and other infections." The Council on Pharmacy and Chemistry found Venodine ineligible for New and Nonofficial Remedies because it was exploited under unwarranted and grossly exaggerated therapeutic claims; because neither the name nor the advertising matter indicated that it was a preparation of the well-known sodium iodide; and because the combination of two such similar substances as creosote and guaiacol is unscientific, adding mystery to the preparation without increasing its efficiency (Jour. A. M. A., June 26, 1915, p. 2155).

Calcreose.—Calcreose (Maltbie Chemical Co., Newark, N. J.) contains in loose combination approximately equal weights of creosote and lime. The advertising claims having been revised, the Council on Pharmacy and Chemistry postponed definite action pending submission of proof (1) that the large doses of Calcreose recommended furnish large amounts of creosote to the blood, and (2) that patients taking these large doses do not suffer from digestive disturbances, loss of nutrition, albumin in the urine or phenol urine as claimed. At the same time it was emphasized that this action did not indicate a belief on the part of the Council that enormous doses of creosote are necessary or beneficial in tuberculosis. So far, the Maltbie Chemical Co. has not submitted the required evidence. As the Council's postponement of a report has been made to appear as a quasi-approval, the Council voted to announce that Calcreose had been refused recognition because the therapeutic claims were exaggerated and unwarranted by the evidence (Jour. A. M. A., June 26, 1915, p. 2155).

Iodex.—Iodex (Menley & James, Ltd., New York) is said to contain 5 per cent. of iodin; the advertising suggests that the effects of free iodin are to be obtained from the preparation, which yet is said not to stain the skin. It is also claimed that thirty minutes after inunction iodine can be found in the urine. The chemists of the A. M. A. Chemical Laboratory on examination found that Iodex contained only about half the claimed amount of iodin, that the iodin did not behave as free iodin and that after inunction of Iodex, iodin could not be found in the urine. Because of these findings and because of the unwarranted therapeutic claims made for the preparation, the Council on Pharmacy and Chemistry held Iodex ineligible for New and Nonofficial Remedies (Jour. A. M. A., June 19, 1915, p. 2085).

Lepso.—The A. M. A. Chemical Laboratory found this to contain bromides, equivalent to 51 grains potassium bromide per dose of one-half ounce (Jour. A. M. A., June 12, 1915, p. 2006).

Herbetta Curine.—A package of Herbetta Curine contained three envelopes, labeled 1, 2 and 3, respectively, and in addition a number of red tablets. The A. M. A. Chemical Laboratory found that No. 1 consisted of tablets which contained soluble iron phosphate; No. 2, of tablets which contained some "bitter tonic," and No. 3, of tablets responding to tests for aloes and aloin. The red tablets were composed essentially of strontium and potassium bromide (Jour. A. M. A., June 12, 1915, p. 2006).

E-Lep-Tine.—E-Lep-Tine is an "epilepsy cure." According to the Indiana State Board of Health, it contained sodium and potassium bromides 16 per cent., alcohol and ammonium valerate (Jour. A. M. A., June 12, 1915, p. 2006).

Tanlac.—Tanlac (The Cooper Medicine Co., Dayton, O.) is a "tonic and system purifier" and is exploited to the public by means of extravagant and absurd claims. From an examination made in the A. M. A. Chemical Laboratory it appears that Tanlac is essentially a venous extract which contains 15.7 per cent. absolute alcohol by volume, a bitter drug (such as gentian), an emodin-bearing drug (such as buckthorn, rhubarb or cascara), a berberine-bearing drug devoid of hydrastine (such as berberis aquifolium), glycyrrhizic acid (from licorice), and flavored with wild cherry and to which has been added a relatively large proportion of glycerin. The "Tanlac Laxative Tablets" which accompany Tanlac contained phenolphthalein (Jour. A. M. A., June 5, 1915, p. 1930).

CALIFORNIA SOCIAL HYGIENE SOCIETY.

To City and County Health Officers of the State of California:

Enclosed are copies of two lavatory signs prepared by the California Social Hygiene Society and approved by the San Francisco and State Boards of Health. These signs are neatly framed in hardwood and covered with glass to prevent mutilation. Having them framed as we do, in large quantities, we get an unusually low price—glass and hardwood frame complete for 17 cents each, soft wood, 12 cents each.

Many of the signs approved by the San Francisco Board of Health have been put up in men's lavatories in saloons, billiard parlors, and hotels, as well as in all the lavatories at the Exposition. The Southern Pacific Company is placing one of the state signs in each of the men's lavatories on the Pacific Coast Division, including passenger coaches, ferry boats and stations.

We are getting many excellent results through our Advisory Department from these signs. This is a most effective means of driving the quack out of business and of keeping men from using injurious patent remedies. So far, there has been

no criticism, but a great deal of commendation for this work. Men who cannot afford to pay for treatment, and there are many such, are referred to the genito-urinary clinics of the five teaching institutions of the city.

Will it not be possible for you to adopt one or the other of these notices? The part of the sign providing for free sex advice and the handling of correspondence could be changed to suit local conditions. The literature mentioned on the San Francisco sign (of which we are sending you a set under separate cover), could be furnished you by us without charge. I should be very glad to handle the framing for you, should you find that it was impossible for you to get a cheaper price than the one quoted above. You understand, of course, that this is not a commercial proposition with us, but that, as a society, we are working for the prevention of venereal diseases and the promotion of public health.

I can assure you that we will appreciate the opportunity of co-operating with you.

Yours very truly,

CLYDE N. WHITE,
Executive Secretary.

PUBLISHED BY ORDER OF THE BOARD OF HEALTH.

Venereal Diseases.

Gonorrhoea (or Clap) Causes:

1. About 25 per cent. of all blindness in the United States.

2. Many childless marriages.

3. Many innocent wives to become invalids for life.

4. At least 50 per cent. of all surgical operations upon the female organs.

5. Gonorrhoea is often not cured when it seems to be cured. The germs of gonorrhoea often remain hidden in the body ready to cause serious trouble later, after the symptoms of the disease have been stopped by treatment. Often the disease is completely cured, but very frequently it hides in the body and then breaks out again of itself after months, or even years. It may then be given ignorantly to an innocent wife, may cause her untold suffering, may make her an invalid all her life, and may cause a child to be born blind.

Syphilis (or Pox) is a blood disease which may be transmitted to wives and children, if not cured, and is liable to cause insanity, locomotor ataxia or total paralysis. Syphilis can be cured.

Prevention.

(a) The only way to prevent Gonorrhoea and Syphilis is to keep away from prostitutes, both professional and non-professional.

(b) Antiseptic washes and other preventive measures are not reliable.

Beware of advertising specialists who claim to cure "Nervous Debility," "Lost Manhood," "Enlarged Veins," "Blood Poison" and "Private Diseases of Men."

Night emissions, or wet dreams, if not too frequent, are natural in men. They are not a sign of "Lost Manhood." These advertising specialists get large sums of money for treating diseases which do not exist.

Patent Sex Medicines are useless, and cause a waste of money.

How You Can Help.

1. In justice and chivalry to our daughters and wives and unborn children, and our sisters, do not risk exposure; stand for the same standard of honor for men as for women.

2. Protect boys from harmful ideas and smutty stories.

3. Send for circulars of information and help distribute them.

(a) For young men; (b) for older boys; (c) for younger boys; (d) for women; (e) for young girls; (f) for parents.

DEPARTMENT OF PUBLIC HEALTH,
1085 Mission St. San Francisco, Cal.

FREE SEX ADVICE.

Free sex advice and free treatment can be obtained at the clinics of the following Medical Colleges:

University of California Clinic, 2d and Parnassus Ave., daily, 8:30 to 10:30 a. m.

Stanford University Clinic, Webster and Sacramento Sts., daily, 8:30 to 10:00 a. m.

Hahnemann Clinic, Sacramento and Maple Sts., daily, 10:00 to 11:00 a. m.

College of Physicians and Surgeons, 344 Fourteenth St., daily at 9:30 a. m.

San Francisco Polyclinic, 1535 Jackson St., daily, 8:30 to 9:30 a. m.

All correspondence treated confidentially. Letters cheerfully answered in plain envelopes.

Write to

THE ADVISOR,
Department Public Health, 1085 Mission St., San Francisco, Cal.

PUBLISHED BY ORDER OF THE STATE BOARD OF HEALTH.

Venereal Diseases.

Gonorrhoea (or Clap) Causes:

1. Most of all the blindness in children in the United States.

2. Many childless marriages.

3. A large proportion of all surgical operations upon the female organs.

4. Many innocent wives to become invalids for life.

5. Gonorrhoea often is not cured when it seems to be cured. The germs of gonorrhoea often remain hidden in the body ready to cause serious trouble even when the symptoms of the disease have apparently ceased under treatment. When not cured it may for a long time be contagious.

Syphilis (or Pox) is a Blood Disease which may be transmitted to wives and children, if not cured, and is likely to cause insanity, locomotor ataxia or total paralysis. Syphilis can be cured.

Prevention.

(a) The best way to prevent Gonorrhoea and Syphilis is to keep away from prostitutes, both professional and non-professional.

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Night emissions, or wet dreams, if not too frequent, are natural in men. They are not a sign of "Lost Manhood." These advertising specialists get large sums of money for treating diseases which do not exist.

Patent Sex Medicines are useless, and their purchase is simply a waste of good money.

STATE BOARD OF HEALTH,
Sacramento, California.

LANE MEDICAL LECTURES.

The next course of Lane Medical Lectures will be given by Dr. Frank Billings of Chicago. Dr. Billings will speak on "Focal Infection." The five lectures will be delivered the evenings of the week of September 20th to September 25th, 1915. Dr. Billings has also agreed to give some clinical demonstrations.

OFFICIAL DELEGATES TO THE PAN-AMERICAN MEDICAL CONGRESS.

Colonel William H. Arthur, Medical Corps, San Francisco, California.
Guy L. Edie (Colonel), Medical Corps, Letterman Hospital, San Francisco, California.
Surgeon General William C. Braisted, Stewart Hotel, San Francisco, California.
Surgeon General Rupert Blue.
Assistant Surgeon General J. W. Kerr.
Dr. Enrique B. Demaria, Argentine Republic.
Dr. Fernandez Mendez Capote, Cuba.
Dr. Juan Padilla Matute, Guatemala.
Dr. Carlos Morales Macedo, Peru.
Dr. Carlos Leiva, San Salvador.
Dr. Francisco Risquez, Venezuela.
Dr. Alvaro Ramos, Brazil.
Dr. Rocha Vaz, Brazil.
Dr. Pedro de Obarrio, Panama.

CITY TUBERCULOSIS CLINICS.

Following in the footsteps of New York, Chicago, Philadelphia, Baltimore, Detroit and Milwaukee, Los Angeles at its recent election has started a division of tuberculosis in the health department; and with the two to one vote of the citizens there the city will have one municipal tuberculosis nurse for every 100 cases that are registered, if they need supervision and care.

Other cities in California would do well to consider the advisability of following in the footsteps of Los Angeles. It was shown very clearly in the vote the attitude of the voters toward the establishment of this municipal tuberculosis nursing, and the investment in a public health way to a community cannot be measured.

Already in cities where the death-rate from tuberculosis has been very high there has been a noticeable decrease in the tuberculosis death-rate due, not only to the recovery of many cases which had been under the supervision of the nurses, but also in the prevention of new cases developing.

Los Angeles now has two clinics, and a night clinic is soon to be opened. Two hundred and fifty thousand dollars has recently been appropriated for a county sanatorium. Provision will be made in this sanatorium, which is the last word in sanatorium construction, for cases that can pay a dollar a day, but who cannot spend an indefinite length of time in an expensive private sanatorium.

The city will be districted, and as many nurses as are needed put into a district. They will be made responsible for the conditions in that district and will co-operate with the housing commission, and the new method of cleaning houses where there have been cases of tuberculosis will be adopted. The old way of fumigating will be done away with and the methods used in New York, and other places, will be adopted. "It is an extremely simple method," said one of the nurses in a recent interview. The city supplies, instead of an expensive fumigating machine, two strong people who go in with plenty of soap and elbow grease, and the place is thoroughly scrubbed and cleaned and left open for the sunshine to complete the process.

There will be a card index made of houses in which there have been cases of tuberculosis, and anyone wishing to learn whether the house they are moving into has been properly cleaned, can call up the health department and be assured that they are not moving into a house or apartment that has become infected from a case of tuberculosis.

This, in itself, since there are thousands of new cases on record that have contracted tuberculosis from houses that have not been thoroughly cleaned, ought to make the taxpayers feel that there was an opportunity for them to feel that every vote cast for the nurses' ordinance meant protection for their families.

Recently, from Cook County Infirmary in Chicago, comes an extremely interesting article from a young man whose family in 1899 moved into a farm house in which previously two families, harboring far-advanced cases of tuberculosis, had occupied the same house. The man, then a lad of thirteen, was exposed to house infection until he was eighteen years of age, when the family moved away. At 23 "the break" came in the form of glandular and pulmonary trouble, and he did what was thought to be effective in those days, tried climate without care; and for five long years he went from Texas to Louisiana and Montana, chasing the cure; finally when he returned to his home he weighed a little over 100 pounds. With little prospect of recovery he entered the Oak Forest infirmary in November, 1914. He has reversed the odds and is winning the fight. His weight has gone up to 180 pounds, he has lost all active symptoms, is doing four hours' work each day, and is fast approaching an arrest of the diseased condition. Last month, thinking his experience would be valuable to his fellow patients, he requested the head physician to allow him to speak to the 660 others who were in the institution.

The State Association for the Study and Prevention of Tuberculosis mentions this case to show what institutional care, when properly given, means to any one suffering from pulmonary tuberculosis, and the opportunity of the municipal nurse is to find these cases; and until our hospitals are large enough to accommodate those people wishing to be placed in an institution, to try and teach them hygiene and sanitation, and keep the rest of the family from becoming infected.

Los Angeles in the past year has expended a great deal of money for a great many different things; but we say unreservedly, that the dividends from the recent action of the voters cannot be reckoned; and we advise every city in the state to watch the work in Los Angeles and to follow her example.

NEW MEMBERS.

Heiges, Laurence E., Lompoc, Cal.
Brusco, Henry D., San Francisco.
Howard, J. L., San Francisco.
Miner, Henry Nelson, Colfax.
Davis, Walter W., Brea, Cal.
Diepenbrock, Anthony B., Sacramento.
Liles, Lester McKesson, Santa Cruz, Cal.
Bush, B. H., Santa Cruz, Cal.
Bush, I. C., Santa Cruz, Cal.
Hasson, D. W., Buena Park, Cal.
Bryan, Geo. Corbin, Fullerton, Cal.

DEATHS.

Brumfield, W. C., (died years ago in Porterville, Cal.).
Smiley, Walter C., Beaumont, Cal.
Lengfeld, A. L., San Francisco.
Downing, Wm. G., Suisun.
Neumeister, A. E., Morgan Hill.
Earle, Chas. Henry, Los Angeles.
Ferrin, J. A., Half Moon Bay, Cal.
Bicknell, Fred'k. T., Los Angeles.

California State Journal of Medicine.

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VOL. XIII SEPTEMBER, 1915 No. 9

EDITORIAL NOTES

THAT "HOG-TIGHT FENCE" AGAIN.

Quite a number of letters referring to an editorial note in the last issue of the JOURNAL have been received and it is very evident that the action of the Board of Medical Examiners referred to by Vanderburgh does not meet with much approval, to say the least. The following is a sample and is a letter written by a distinguished physician in the Southern part of the State:

> "In reading the last issue of the STATE JOURNAL and especially the published letter of Dr. Vanderburgh, at his request, on the so-called 'hog-tight fence,' it has occurred to me that the inward craving of the doctor's 'spleen' has been fully satisfied. And I had another thought in reading this letter and your editorial comments thereon: Could it be possible that any medical man sufficiently intelligent and honored by the state to sit on the Board of Medical Examiners could be found so narrow and selfish as to desire to sacrifice the health and lives of the people of the state in the interests of some one 'pathy'! God save the people!"

In order that our members may become acquainted with the facts and that the attitude of the members of the Board of Medical Examiners on this very important question may be a part of the printed record, the minutes of the board have been carefully gone over and particular attention given to their method of dealing with the osteopathic situation, for reasons which will appear subsequently. The minutes of the June meeting show the following action:

> "Moved by Molony, seconded by Vanderburgh, that on the basis of the report of the College Investigation Committee, the Los Angeles College of Osteopathic Physicians and Surgeons, the California Eclectic Medical College and the College of Physicians and Surgeons of San Francisco be temporarily approved till December 1, 1915, as qualifying applicants for the Physician and Surgeon examination.
>
> "Ayes: Tasker, Vanderburgh, Molony, Campbell, Brown, Smith, Pinkham.
>
> "Noes: Alderson, Loos."

There is the record. What does it mean? It means quite a lot, when you study it. It means that an osteopath is no longer to be an osteopath but is to be recognized as a "physician and surgeon." Under our wonderful and fearful medical law, the Board of Examiners is authorized to issue two classes of licenses to practice; to drugless practitioners and to physicians and surgeons. The osteopath of course comes within the drugless limitation—or did, until this action of the board which Vanderburgh so complacently refers to as removing a section of the "hog-tight fence." The action of the board above quoted appears to allow graduates of an osteopathic school to apply for license to practice, not as osteopaths, but as physicians and surgeons! And two Regular members of the board voted for the resolution: Wm. R. Molony, Los Angeles; A. M. Smith, Oakland; the vacancy caused by the resignation of Dr. Gundrum has not been filled, so that there are but four Regulars on the board at present.

OSTEOPATHIC M.D.'S, AND HOW.

The resolution bases this recognition of graduates of an osteopathic school for application to obtain a physician and surgeon license on the report of the College Investigation Committee. It may be said in passing that the Los Angeles College of Osteopathy has been claiming for some time that it was competent to teach and did teach and graduate doctors of medicine, giving the degree of M.D. The report of this College Investigation Committee for last year has already been commented upon in the JOURNAL. It is spread upon the minutes of the Board of Examiners and hence is a public document which any one may consult. It showed conclusively that the claim of this osteopathic school to teach regular medicine was what would be a farce if it were not an insult to human intelligence. On the basis of this year's report, which is not materially different from last year's, this osteopathic school was given recognition as a drugless college for one year and only

with the understanding that certain improvements would be made in that time. On top of all this, and with the full knowledge of the two reports of the College Investigation Committee, two regular members of the board vote to allow graduates of the institution recognition as applicants for a physician and surgeon license—to become full fledged doctors of medicine!

ONE DANGER OF IT.

A very vital matter, utterly overlooked by some of those on the board, and off the board as well, who have been anxious to let down the bars or who have been willing to see it done unprotested, is the duty the state owes its own licentiates and the graduates of its own recognized medical schools of high standing. Even under former and higher standards, a number of states would not recognize California licentiates for the reason that our standards were too low. As our standards go down, the list of such states increases and if the various fakers be given the same license that is granted to those who have a hard-earned degree of doctor of medicine, the standard of California will be equal to or lower than that of the lowest grade state in the Union. When that happens, what will a license to practice in California be worth to the holder? It would, in some ways, seem almost better to have no law and no license at all.

THE WHY OF IT.

While on the subject of the relations of the osteopath toward medical activity in the state, let us go into it a little more fully and set out some other matters of interest and importance. Up to a couple of years or so ago, the osteopath made no strenuous effort to obtain actual recognition as an M.D. To be sure, many of them really practised medicine and surgery, but under the name of osteopathy. But now conditions have changed; the industrial accident law and the federal narcotic law have brought about the change. Under the former, only duly licensed physicians and surgeons have any recognition, thus barring out the osteopath and the followers of other delusions from doing any of this work; under the latter, the same classes of healers are barred from dispensing or selling narcotic drugs. Do you see the reason for their wanting the designation of licensed physician and surgeon? Under the old conditions, they practised about what they pleased under the osteopathic license; under the new conditions the law does not recognize them at all unless they have the M. D. license.

THE HAND OF THE DEVIL, ONCE MORE.

Last month we published a review of an excellent book. And somehow, one cannot say how these things ever happen, the name of the author was left out. Neither the librarian who noted the return of the review, nor the editor who read the "Copy," nor the writer of the review when he corrected his proof, noticed this rather considerable omission. The book was "The Gynecology of Obstetrics" and it was written by Dr. David Hadden, of Oakland.

RAIDS ON QUACKS.

The Special Agent of the Board of Medical Examiners is doing splendid work in the elimination of quacks and unlicensed "practitioners," and the people certainly owe something to him—Mr. A. J. McDonnell. In the early part of August he moved quietly into Stockton and before they knew it, he had two Japanese and eight Chinese "Doctors" arrested. The two Japanese broke all previous records for speed; they were arrested, held for trial, plead guilty, fined $100 each and agreed to quit their nefarious work, all in one day! It was largely through the tireless work of Mr. McDonnell that the notorious Higgins was finally arrested and is now held under a number of charges and indictments in the federal court. We wish to congratulate the Board of Examiners on having at its command the services of such an active and patient man as Mr. McDonnell.

INDUSTRIAL INSURANCE.

The Judicial Council of the American Medical Association cannot be too highly complimented on the comprehensive report which they presented to the House of Delegates at the A. M. A. meeting last June and which appears in the minutes of the House of Delegates, *Journal of the A. M. A.*, July 3, 1915. It is a mighty instructive document and shows careful, and conservative study of the whole situation. New conditions have arisen which it is quite beyond our power to control. The only thing we can do is to aid in the better development of what has come and let the future discover whether the fundamental ideas involved are right or wrong. As time goes, they seem to be more right than wrong, but we are too near them to have any point of perspective. This report of the Judicial Council is well worth the careful study of every one of us. Industrial insurance we have in some measure; that we shall have more of it in increasing measure, is certain; that we cannot know too much about what it is, what it has done in other places and how it has developed in other countries, is also certain.

"SUGGESTIONS TO MEDICAL AUTHORS."

The American Medical Association publishes some very valuable pamphlets, a catalog and price list of which will be sent on application. Not the least valuable of these is one having the above title. "This pamphlet of 27 pages, discussing the above-mentioned topics and many others, will be sent on receipt of 10 cents. It contains valuable information in regard to the preparation of articles for publication and the points which make an article acceptable." We are almost tempted to offer to furnish the 10 cents to any prospective author who will send for it, read it and follow it, before preparing his article for submission.

THE STATE MEDICAL SOCIETY AND PLAGUE.

All the various jubilations over the eradication of plague in San Francisco and the development of the idea of a plague-free city by properly constructing all buildings so that they are rat-proof, has left out of the record of events the most essential part in the work which was played by the Medical Society of the State of California. At this particular time, when so much reference is being made to the plague fight and the bearing of the successful result upon the possibility of having an Exposition in San Francisco, it seems not unfitting to go back a bit, think of the facts as they were, and place a few words upon the record. To that end and for that purpose we have asked a gentleman who was very active in his interest in the plague situation from the very beginning, to set forth the facts in relation thereto which came within his personal knowledge. The "Williamson Board of Health," to which he refers, was the board thrown out—but refusing to to go out—by the then Mayor of San Francisco. Dr. John Williamson was President of the board. The President of the State Society at the time the mass meeting was called in 1908, was Dr. George H. Evans, of San Francisco. Mr. King and Mr. Friedlander, of the Merchants' Exchange, were about the only members of commercial bodies who took the trouble to come to the meeting. The Governor was rabidly anti-plague and wanted a law passed making it a felony to say that plague existed in the State of California; his representative, Dr. Anderson, did what he could to help him along. A more unwholesome condition of things than existed at that time can hardly be imagined.

In 1900 plague was epidemic in Chinatown. I have forgotten the total number of verified cases (121 I think) but the writer personally attended a great many autopsies, reports of which were wired to the Journal of the American Medical Association and published. Notwithstanding the efforts of the Williamson Board of Health at that time, and the Public Health Service under Dr. Kinyoun, to make public the facts, a crusade of vilification and denial was carried on by the business interests and the press which was shameful in the extreme. While business men and press representatives personally and privately expressed their conviction that plague existed, the policy of the press was one of suppression of the facts.

About this time a Federal Commission composed of Professors Barker, Novy and Flexner was appointed by the President to investigate plague in San Francisco. The report of this commission established beyond doubt the existence of this disease and its report became a public record. In spite of such undisputed proof, the policy of denial was persisted in by the press and business interests, aided by Dr. Winslow Anderson and his paid "bacteriologist."

Early in 1908, officers of the State Medical Society, who had been watching with alarm the constantly increasing incidence of plague among the rats captured, concluded that the influence of the organized profession of the state must be exerted in order to obtain the publicity necessary, so that measures for eradication could be undertaken. The influence of the Public Health Service under Dr. Blue, the City Board of Health, and a committee of the County Medical Society had been unsuccessful in forcing publicity. The press and the business interests were unwilling that business should be injured by announcing to the world that plague existed in San Francisco. The public was asleep and ignorant of the danger that hung over the city. The number of infected rats had steadily increased, month by month, from 0.5% in September 1907 to more than 1.5% in January 1908. At this time the President of the State Medical Society requested the Council to appoint a committee to use the power of the profession to force publicity. The President was appointed chairman of such a committee and was empowered to choose his own committeemen. Drs. Jno. M. Williamson, H. M. Sherman, John Gallwey and Jas. H. Parkinson were appointed on this committee. After conference with those interested it was decided to call a mass meeting of those prominent in business and professional life. This was done. Six hundred invitations were sent—60 appeared at the meeting in the California Club Hall one night in January 1908.

At this meeting a resolution was presented and passed, calling for the appointment of a Citizens' Health Committee of 25. A few days later this committee was appointed by the Mayor, the President of the County Medical Society and the President of the State Medical Society. Thus was inaugurated the campaign against plague in San Francisco, the success of which requires no elaboration here. A few days after a large mass meeting was held upon the floor of the Merchants' Exchange and the necessary publicity was obtained.

HELP THOSE WHO HELP SUPPORT YOUR JOURNAL

ORIGINAL ARTICLES

TYPHOID FEVER.

A Résumé of Present-Day Knowledge.

By W. W. BEHLOW, M.D.

Typhoid fever is a very important disease both from the sanitary and from the economic viewpoint. It stands fourth in the list of mortality tables in the United States. It is one of the disgraces to our civilization. In six years it kills more people than were killed on both sides during the Civil War. This disease occurs both in epidemic and endemic forms, in fact it may be regarded as pandemic. While most frequent from July to October, it occurs at all times of the year. It is more prevalent in country districts. All ages, both sexes, rich and poor are attacked.

Infection. The cause of the disease, the bacillus typhosis, probably always enters the body by the mouth. Entering the intestine it finds its way to the blood and thus this disease is a true bacteraemia. The bacillus leaves the body through the urine and feces, and infrequently by means of the sputum and other discharges. In the urine, the organism is found most frequently from the second to the fifth week. It appears early in the feces, sometimes before the onset of fever.

The bacilli appear in the blood early in the disease and blood cultures taken during the first week of the fever will usually show the organism. Kayser obtained the bacillus in 90% of his cases in the first week.

Bacillus carriers are one of the great problems of this disease. Rosenau states that 4% of all typhoid cases continue to shed the bacilli in feces and urine during and after convalescence.

Typhoid is spread by direct and indirect contact. Milk, water, and other foods, are common sources of infection. Flies, soiled linen, and "contacts" add their share to the spreading of the infection.

Prophylaxis. By the introduction of dead typhoid bacilli into the subcutaneous tissues, an active immunity may be induced. How long this immunity lasts it is impossible to state but the duration is probably two to three years according to the dosage of vaccine employed.

Symptoms. The period of incubation is from eight to twenty-five days. The onset is usually slow and the patient complains of inability to do his accustomed work. Loss of appetite, headache, and bronchitis are frequent early symptoms. The onset may be very abrupt, and the disease may be ushered in by chills and moderately high fever. From the time the patient goes to bed, the definite onset of the disease is usually dated. There are certain exceptions to this general rule. During the first week the fever usually shows a gradual rise but it is important to realize that this is the typical case. More frequently, the patient is not seen until the disease has progressed several days. The pulse is moderately rapid but in proportion to the temperature it is relatively slow. Toward the end of the week the spleen is palpable and the skin eruption appears. These rose spots appear in crops. Some patients never show any spots while others may be covered with the eruption. Examination of the blood shows a leukopenia and a slight anemia.

During the second week the patient is really sick. His temperature remains high with little or no morning remission. His expression is dull and heavy. The tongue becomes covered with a thick brownish coat and in the severe cases may be dry. During this time there is apt to be muttering delirium. The abdominal signs are very important, as diarrhea, tympanites, and some tenderness may occur and require the careful attention of the physician. The patient now shows some loss of flesh.

In the usual case, the third week brings about slight improvement in the patient's condition. The temperature begins to show morning remissions. The evening rise becomes less as the days go by. The abdomen needs careful observation at this time as hemorrhage and perforation are most frequent during this period.

After the third week convalescence may be said to begin. Appetite is returning, the mental condition is brighter, the temperature gradually returns to normal, and the abdominal signs disappear. This description is true for the normal case of typhoid. The severer cases may terminate before this time. In others, the onset may be more gradual and the duration of the height of the disease may be considerably longer.

Complications. Recrudescence and relapse are true complications. Tympanites may be a most serious trouble and may require the best efforts of the physician to combat it. Pleurisy, otitis media, periostitis, phlebitis, myocarditis, and furunculosis are frequently found in typhoid patients. Pneumonia is not uncommon. The most serious of all the complications are hemorrhage and perforation. As it is not the purpose of this paper to thoroughly describe each condition, it will be sufficient merely to mention the most important of the complications.

Treatment. Rest in bed, careful diet and proper nursing are the essentials. Too much nursing is worse than none at all. Many a patient has had his chances of recovery lessened by the well meant attentions of an enthusiastic nurse. A typhoid patient needs all the sleep that he can get. He needs plenty of fluids. The bowels should be carefully watched and an enema given at least every second day. Hydrotherapy is an important part of typhoid treatment. Baths are not indicated merely to reduce temperature. The fact that mental signs are associated with high temperature is the important thing to remember. Hydrotherapy is indicated when the toxemia causes delirium in addition to temperature. Of course the patient should receive a cleansing sponge each day but the idea of giving baths whenever the temperature reaches a certain point should be forgotten.

Diet. Each patient must be dieted according to his needs. Usually the patient cannot take much food during the height of the disease. His digestive powers are far below par. A light diet of milk, gruels, and broths with sufficient lactose

added to the milk for caloric purposes, will take care of the patient during the worst stage of the fever. As time goes on, any food which will meet the following requirements may be given: nutritious but not bulky; easily digestible; non-irritating to the intestine; quantity commensurate to digestive power; adapted to patient's condition; palatable and varied.

The advantages of a liberal diet are that nutrition is better maintained, strength is better maintained, convalescence is shorter, distention is uncommon, and patients suffer less. A diet composed almost wholly of milk is the cause of abdominal distention in a large number of the cases of typhoid.

Of drugs, there is only one that should be used as a routine, namely, hexamethylenamine, and care should be exercised in its exhibition as it may cause hematuria. If the latter does occur, the drug should be omitted for a few days. This drug is given for one purpose only, the destruction of bacilli in the urine. Other drugs are ordered as symptoms require their use.

Vaccine therapy. This form of treatment has many advocates. Others claim that it does no good. The proper use of vaccines does no harm. The best results are obtained if the vaccine is used early in the disease. Late in the disease vaccine is of doubtful value. The usual dosage is 50,000,000 according to Krumbhaar and Richardson.[1] This is repeated in three day intervals. No set rule as to dosage can be made.

Laboratory tests. The blood culture method has been mentioned. The Widal test is valuable and if not positive the first time should be repeated frequently until it becomes positive or it becomes certain that the patient has not typhoid fever.

Conclusions. Typhoid is a filth disease. It can be prevented by sanitation and by the use of preventive vaccine. Careful nursing is important in the treatment of the disease. Vaccines are valuable for preventive measures. Their value as a curative agent is still questionable. A reasonable diet should be prescribed. Care should be taken to prevent spread of the infection. Education of the public will diminish the morbidity statistics of typhoid fever.

1. Krumbhaar and Richardson. Amer. Jour. of Med. Sc., March, cxlix, No. 3.

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STATISTICS OF MY NEW ADVANCEMENT OPERATION WITH REPORT OF CASES.*

By RODERIC O'CONNOR, M. D., Oakland.

I do not intend to take up valuable time by giving a description of the operation. This has appeared in the journals on several occasions—the last and most complete being in the *Ophthalmic Record* for December 1914. For the benefit of those who may not have seen any such account I will say that the object of the method is to avoid constriction of tissues by sutures and tension on sutures. This is done by looping marginal strips of tendon so as to form a double half hitch about a strand of catgut (20 or 40 day). This leaves a central tongue which is slack the amount of the marginal shortening. This central tongue can then be tucked, resected or actually advanced an amount equal to the marginal shortening and the suture holding it be free from tension during the healing process. In view of the absence of constriction and tension I claim the method to be mechanically and surgically correct in principle.

My claim in this operation is that if it is properly done and especially if the retaining suture is not tied so tightly as to cause constriction and sloughing there will be no slipping at the point of operation and that it will be safe during the entire healing process. Of course there may be later on a loss in effect due to remote causes or to a continuation of the causal condition.

CASES.

(1) This was to determine the practicability of the technic and was on a blind eye exotropic about 15 degrees. Using a No. 3 gut a complete immediate effect was secured which had diminished but very little two years later.

(2) This was one of about 20 degrees alternating exotropia in which by two operations five months apart a perfect result was secured. In each operation No. 3 gut was used.

(3) One of 22 degrees esotropia in which about 15 degrees of permanent result was secured using No. 3 gut. Second operation refused, being satisfied with the cosmetic result from the first.

(4) One of 15 degrees esotropia in which a complete result was secured in one operation using No. 3 gut.

(5) One of about 35 degrees esotropia in which three weeks after operation there was lateral orthophoria and binocular superposition from one operation using No. 4 gut.

(6) One of 50 degrees esotropia in which by a double externus shortening at one sitting was secured about 40 degrees of correction; No. 4 gut was used.

(7) One of 50-60 degrees exotropia in which parallelism of the visual axes was secured from one operation using No. 4 gut.

(8) One of 18 degrees esotropia in which the immediate effect was only about 10 degrees in spite of using No. 4 gut. Three days later a gonococcal conjunctivitis developed and ruined any chance so that the cause of the poor immediate effect will never be known.

(9) One of 20 degrees esotropia in which an immediate effect of at least 10 degrees over-correction

* Read before the Third Annual Meeting of the Pacific Coast Oto-Ophthalmological Society, San Francisco, June, 1915.

was secured using No. 4 gut. Three weeks later the condition was reported to me as one of "perfect correction."

(10) One of paresis of right external rectus of a year's standing the result of fracture of base of skull. Binocular field was but 8 degrees to the right while the actual rotation was 40; about 13 degrees less than that of the other eye; No. 3 gut was used as only a small effect was desired. Twenty days after the operation the rotations were normal with no diplopia which had been very annoying before. Six months later the result was reported as perfect, there being no diplopia with normal rotations monocular and binocular.

(11) One of 20 degrees esotropia in which a marked over-correction was secured by a No. 4 gut. This diminished somewhat in the succeeding days but I had a report stating that six months later there was but 2 degrees remaining esophoria with binocular vision and full comfort in the use of his eyes.

(12) One of 15 degrees esotropia in which the immediate effect was insufficient—a No. 3 gut being used—but six months later the condition was reported as having 7 degrees remaining esotropia. This could easily be corrected by a second operation on the other eye.

(13) One of 70 degrees paralytic external squint of the right eye due to a third nerve paralysis of over 20 years' duration. There was absolutely no power of adduction, the eye being set in the excessive divergence. The eye was blind for all practical purposes, having only 10/200. It was made clear to the patient that by no chance could a complete straightening be obtained but she said she would be satisfied if it could be gotten anywhere "to the front." In this case the central tongue was simply laid forward on the sclera, dependence being placed entirely on the marginal shortenings. No. 4 gut was used and two weeks after the operation the divergence was 20 degrees, giving a result of 50 degrees. In this case though, a complete tenotomy of the tendon of the externus was done. It seemed as though there was an attempt at adduction made but not a useful amount.

On May 24th, two and one-half months after the operation, the deviation was between 15 and 20 degrees measured on the perimeter, showing a slight gain. She also had gained a slight power of inward rotation. In examining the case please remember the tenotomy was only of the tendon proper and that the central tongue of tendon was simply laid forward without suture, dependence being placed on the marginal shortenings to hold it in place; also that before operation the cornea was half hidden behind the external canthus.

(14) This case measured close to 35 degrees deviation inwards of the right eye by perimeter and phorometer. In this case also only a cosmetic result was looked for owing to a marked impairment of central vision due to an old macular hemorrhage. A tenotomy of the internus had been done in the fall of 1914 limited to the tendon proper but without much permanent effect. The right externus was shortened by my method on May 29th using a No. 4 Lukens gut and suturing the central tongue with a 000—40-day Van Horn gut. A slight immediate over-correction was secured; possibly 5 degrees. This was to naked eye appearance and most likely due to a slight corneal decentration as two weeks later the eye tested practically straight on the perimeter. She went to her home in Stockton and informs me that she took the bandage off the operated eye the next day and went to her work as stenographer the second morning and has not lost an hour from her work because of the operation.

It will be seen that there was only one failure among the sixteen operations—the one that developed the infection. In two others I secured only a partial result, but this was due to my using too small a size gut. Not enough operations have been done as yet to serve as a basis for an accurate estimation of the effect desired.

Discussion.

Dr. W. Johnston, Spokane: This is new work, and as I have never performed the operation I do not see why I was asked to discuss it. The only thing I can do is to congratulate the operator on the results obtained. I think we all feel like congratulating ourselves when we have a correction of 15-17 degrees; in fact, I always congratulate myself when I know the sutures in my cases of advancement have held.

I think after this has worked out we will all see the benefit of this operation.

Dr. J. L. McCool, Portland: There seems to be a tendency on the part of most operators to break away from any operation which disturbs the natural firm union of the tendon of an ocular muscle to the sclera, and many men are doing the tucking operation for squint and heterophoria in perference to cutting away the attachment and doing a straight advancement. I feel pretty sure that many will agree with me that the action of the advanced tendon is not increased by its advanced position; in other words, the point of action of the muscle is not further forward than its original insertion. Whatever operation we perform (either tendon tucking or this operation of Dr. O'Connor's) which maintains that new point of action on the old point of insertion, accomplishes as much as any advancement operation will do. I read and studied very carefully Dr. O'Connor's report in a recent number of the Ophthalmic Record and I had an opportunity to try the operation. I tried it on a cadaver which was very fresh and the tendons very pliable, and I was surprised at the ease with which you could transfer the loop of catgut to the tendon. Consequently I tried the operation on a young man with exotropia for distance—probably 25 degrees, upon whom I had done a tendon tucking with the Clark tendon tucker several weeks before. I secured approximately 12 degrees with the original operation. In the O'Connor operation I used a No. 3 gut and succeeded in transferring the strips of tendon very nicely. I did it on the internus and found it not much more difficult than the old tucking operation. I think you will agree with me that the internus is a difficult muscle upon which to perform any shortening operation on account of the limited space in which to work. I did not separate the middle tongue of tendon from its original attachment to the sclera, for I was slow enough in doing the really important portion of the operation and I did not feel that I wanted to subject my patient to any more manipulation than was necessary. I only succeeded in accomplishing about 8 degrees of squint. According to his paper and the description he gives, a No. 3 gut will take care of approximately 15 degrees. In talking with him at lunch, he pointed out the fact that possibly my supporting suture of 00 gut was tied too tightly and possibly gave way.

I think so highly of the operation and the surgical principle involved, in which he has shown absence of constriction that could cause sloughing, as well as the fact that it is not particularly difficult, that I mean to try it whenever I can. I see no reason also in cases of convergence insufficiency why this operation could not be utilized with great benefit. I believe that the principle involved, and the way Dr. O'Connor has worked the operation up to its present point of perfection, certainly deserve support from all of us. Surely, none of us feels that his work is so perfect that he could not at least try out on a few cases the principle which this operation involves.

Dr. O'Connor, closing discussion: I have had reports from a number of men who have been trying the operation, and their results have been inconsistent and not as good as mine. I wish to read an extract from a letter from Dr. Chance of Philadelphia:

"Such cases as I have seen in which no deviation took place from your express directions have produced satisfactory results, a satisfaction perhaps equal to that following more complicated methods. I personally regard yours as simpler than those in which threaded tucks are made. I have seen all sorts of deviations and although the cases are presented as the results of 'O'Connor Operation' they cannot justly be so classed."

I read this to show that there may be possible causes for some of the unsatisfactory results outside of the operation itself.

PRESIDENT'S ADDRESS BEFORE THE SIXTEENTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY, SAN FRANCISCO, CAL., JUNE 21-22, 1915.

SOME OBSERVATIONS ON THE PRESENT STATUS OF AMERICAN MEDICAL JOURNALISM.

By FRANCIS M. POTTENGER, A. M., M.D., LL.D., Monrovia.

The importance of an effective American medical journalism which shall stimulate the best effort of our own American profession and afford an opportunity for recording our own best thought, and, at the same time, keep before our profession the advances that are being made in the entire medical world, cannot be overestimated. The strength of our profession and the progress it shall make depend largely upon its literature. While our American profession is young and not yet established upon the stable conservative basis of our European confreres, yet it has much to be proud of. The pages of medical history bear the imprint of many men from this side of the Atlantic; and at no time has our profession been so active as now. The fact that we are not conservatively settled is to our advantage, rather than disadvantage. While we may envy the comfortable, honorable position occupied by our confreres in Europe, and envy the position which they have established for themselves through centuries of toil and service, yet we must not be unmindful of the fact that our very freedom, the fact that we are comparatively unbound by tradition and that we are in the making as a scientific profession is to our advantage.

During recent years our profression has been undergoing important changes. It has been demanding higher standards of scholarship and stricter requirements of its members. The public at large has put us on trial to prove that we are worthy of and able to hold its confidence. With the high standards of efficiency that we have set for ourselves, and the demands which are being made upon us by the public, our profession needs have no fear. Its future is secure. When one reviews the genuine advances which the past twenty-five years have added to our scientific knowledge, he is forced to recognize that our science today is as different from medicine of the seventies and eighties of the last century as the adult is from the child. Fortunately for those of our profession who live to-day they are engaged in the study of medicine at the time of its greatest development. The accomplishments of to-day, however, are based on the knowledge of the past and workers must not be unmindful of what has been done by the pioneers of previous centuries; but with the glorious heritage coming to us from our faithful predecessors, it is our privilege, as well as our duty, to gradually and systematically build a structure of scientific medicine where every stone used in the building has been subjected to tests which have been proven by many careful independent workers.

American medical journalism records the events which lead up to and take place during the building of America's scientific medicine. Therefore it must be accurate, complete and efficient in that it keeps every group of workers in touch with what is being done by every other group.

Any one who has had editorial experience realizes his limitations in attempting to pass upon the merits of papers which are submitted to him, covering as they do all branches of medicine. Many papers add nothing new to the discussions of known scientific facts, nor do they add new observations; and medical literature would be just as rich without them. There are others, however, which may contain important facts and yet they may not appeal to the editor, and be rejected.

Medical journals are not wholly for the original investigator. They are for the purpose of bringing the work of the original investigator to the members of the profession at large; for establishing truth and rejecting error; and, for discussing and making plain the application of facts. It is only by constant repetition that we learn. We read a scientific article and obtain a certain number of facts and a certain amount of stimulation from it. Later we read it again, and later still again, and each time wonder why we overlooked so much truth in our previous readings. So discussions are as necessary a part of medical literature as the reporting of the original facts. By recording his own thoughts and experiences even without adding new facts one is helping others to understand principles which would otherwise escape them. How far medical journals can allow free expression of opinion without appearing to foster error is open to question. The editor's position is a difficult one. He is supposed to be able to differentiate the good from the bad and yet he is only able to see things from his own standpoint. If he rejects good work the author is discouraged; on the other hand, if he lets a bad article appear, readers may be led into error.

American medical journalism to-day is in a very unsatisfactory condition. It is in a state of transition. A few years ago the self-respecting members of our profession began to take stock and found that they were in a deplorable state as far as medical education and medical journalism were concerned; medical schools were largely private concerns depending on tuition of students for maintenance; and, there being no set standards, preliminary training and scholarship were of little concern compared with the fact that the students

matriculated and met the momentary requirements of the school. From this chaotic state has emerged in the short space of twenty years a strong medical curriculum based on a preliminary training, and a demand upon schools for equipment which has forced them into large universities. So, to-day medical education in the United States is fast becoming not only an honor to our profession but an honor to the state.

A few years ago we had a number of independent medical journals—journals which were published largely by medical book publishers. These journals had been established for two purposes: one the encouragement of medical writing, and the other the furtherance of the interests of the publishers. The purpose of these journals was not questioned, neither was their value to the profession doubted until a comparatively recent date. The spirit of commercialism which has been so rampant in all industries gradually assumed greater and greater force in our medical journals. Realizing the value of journals as mediums of publicity, manufacturing concerns which presumably served only the interests of medical men, gradually gained complete control over medical publications. This they did largely through the advertising pages. It is not necessary to doubt the honesty of all commercial houses, for many of them were honest in their efforts to serve the profession and the public, and were willing to take as their reward the legitimate profit from the sale of their products. Others, however, were less scrupulous and resorted to undignified and questionable methods.

The acts of certain commercial drug houses became especially obnoxious. Page on page of advertisements could be found in nearly every journal exalting the claims of some special preparation, and teaching false therapeutics at so much per line. This was followed up by smooth tongued detail men who entered the office of the physician and, with an assumed superior knowledge, presumed to argue with him as to the merits and demerits of certain therapeutic measures. Even the medical profession at last became aroused to the extent of the insult.

American medicine, while no less interested in the fundamental principles of our science, has always aimed at improving its therapeutic measures. This is the principle upon which the American Therapeutic Society is based. Therapeutic nihilism is neither acceptable to the American public nor the American profession. Our profession refuses to occupy the position as coroner to the public and to recognize that its chief role is to determine the cause of death. Its aim is to alleviate suffering and apply curative measures. If it cannot do this it has no claim to the confidence of the public except in its efforts to prevent disease. In its effort to teach therapeutics it needs and must have an efficient, independent journalism.

The selling of advertising space, while legitimate, has a tendency to lower dignity and might even influence the selection of papers and the character of the journals. There can be little real improvement, until there is a general understanding of the functions of medical journals; until it is recognized that they are media for the education of the medical profession and not for supplying it with questionable information or earning money. Needless to say, however, every respectable journal should have earning capacity sufficient to pay all expenses of conducting it on a high plane.

We have at the present time too many medical journals, such as they are, but entirely too few that can be considered as worthy of our profession. They may be classed under the following heads: The privately-owned journal conducted for profit primarily and medical education secondarily; the privately-owned journal conducted from altruistic motives; the journal which is the organ of some society and whose purpose is the furthering of the interests of that society primarily and medical education secondarily; the organ of some medical institution whose primary purpose is to publish the work done in that institution, together with other papers along similar lines; and the purely scientific journal, representing no particular set of workers and depending on the support of scientific workers in general for its success. All of these journals may be good journals and do untold good for medicine. Some of them are largely dependent upon advertising, while others are wholly free from its influence. Under existing conditions the question of whether or not a journal of a certain type can be successfully published or not is not a question of whether such a journal is needed, but can it draw sufficient advertisements to make its publication a monetary success?

It is a self-evident fact that paid advertisements occupy too important a place in medical journalism. Can it be that a great profession like ours cannot place its new discoveries and its general scientific discussions before its members except through the profit from advertising space? If such is the case then it is all important that such advertisements be carefully scrutinized so that none that are unworthy appear.

The work that is being carried on by the American Medical Association in the interest of clean advertisements is commendable. But alas! How few other journals follow its lead! How many can afford to do so from the financial standpoint as long as advertisers must pay for our privilege of obtaining medical facts? If we view ourselves in the true light we are in the following plight: We obtain our scientific medical facts through our journals simply because commercial houses see fit to drop their contributions into the basket. We will no longer smile upon privately owned medical schools because we desire to breathe the pure air of freedom and efficiency; but after we have had our college training we send solicitors to beg private concerns to contribute to the advertising columns of our journals so that we may have the privilege of continuing our education. The result of this is that while the parent journal, the Journal of the American Medical Association, has sufficient patronage from clean, censored advertisements to make it self-sustaining, many of its own children, the journals of the state associations, to a large degree, still serve their readers by paid advertisements from uncensored

products. While the parent is able to feed its readers on certified milk, the children are compelled to serve their readers not only with uncertified, but unpasteurized milk; milk uncontrolled in every stage of its production.

What is the remedy? Far be it from me to offer an easy way out of this difficulty. But it seems certain that no definite headway can be made in the final establishment of an efficient scientific medical journalism until a maintenance independent of advertisements is provided. This may be too far in the future for present-day consideration, but it is logical.

The first step in that direction is to recognize that there is a difference between journals for organization and journals for teaching scientific medicine. The second step is to divorce scientific journals from their dependence on advertisers and make them self sustaining, either through an adequate subscription price or through endowments. Science should be separated from business.

I do not wish to be understood as criticizing individual journals as they now exist or have existed in the past, but I desire to point out the need, as I see it, for relieving our present unsatisfactory state of affairs. The Journal of the American Medical Association and the journals of many of our state associations are a credit to the profession and are doing good work in both organization and teaching of scientific medicine; but no one can give more than a passing glance to the situation without seeing that our American profession cannot be dependent upon these for their scientific education. These journals are, and should be, partly scientific in their nature but they can never fully serve the needs of the American profession in scientific medicine; for their first function is to promote organization and improve the condition of medical men as a body. We need these journals for organization; but, aside from them, we need both general and special journals of national circulation and national interest, which, as they come to our table, will be representative of the best scientific work that is being done in all sections of the country. No one journal can do this, for the acquaintanceship and influence of every editor or editorial board is more or less circumscribed; but the field should be so well covered that, by taking several journals, the subscribers can keep abreast of the present state of medical science.

These journals should be different in their scope, as they are bound to be from the fact that they are edited by different men and controlled by different influences. Some should be ultra-scientific; others should lead more to general discussions. There is need for both. We also need journals such as are commonly found on the Continent in which a complete discussion of disputed subjects is printed. America heretofore has largely demanded practical papers; but, as our profession grows older, it finds that, as there can be no cream without milk, so practical subjects have facts no less important underlying them.

The philosophical discussion of medical subjects, the bringing of anatomy, physiology, bacteriology and pathology into constant close relationship with clinical medicine, is necessary if we desire to grow as a profession. This should be encouraged more and more in this country. The short practical paper must be supplemented by complete fundamental discussions. It cannot be done unless we have journals which will encourage the writing of such papers. Monographs are the best part of Continental medical literature, and their development in our country would be encouraged if we had journals which would publish papers of length. There is a great gap in our medical literature between the text-book, which, while necessary as a guide, is too impersonal, too inelastic, too incomplete, and too conservative to be more than a guide; and the practical papers which appear in the average journal, telling a supposed fact or experience, free from all scientific discussion. This gap can be filled by monographs, and journals whose pages are open to such papers are needed in all branches of medicine.

By linking scientific medicine so closely to medical organization we have appeared to make it subsidiary and in this manner have brought it under unjust criticism. The triumph of scientific medicine has been minimized because of opposition to organization and the science itself has been put on the defensive. The two should be divorced and scientific medicine should become a positive aggressive factor and take its place, against all opposition, in the front ranks of the world's mighty forces for good. It may be retarded, its influence may be curtailed for a time, but it will eventually come into its own regardless of opposition.

THE DIAGNOSIS OF CONGENITAL SYPHILIS.*

By H. H. YERINGTON, M.D., San Francisco.

Since the diagnostic tests of Wassermann and Noguchi have been brought forward, followed by the treatment of syphilis by the newer therapy, a renewed interest has been taken in this disease which has been almost a precedent in the history of medicine.

I shall endeavor in this paper to review briefly a few points which have been brought out by various writers, and also discuss various points which I have observed during the past four years in the treatment and diagnosis of congenital syphilis.

In reviewing cases I have referred freely to a very careful review on hereditary syphilis made by Harvey Parker Towle in the April and July numbers of the *American Journal of Diseases of Children* of last year, along with other articles.

First, there are many phases of the serum tests which are interesting. Field reports 12 cases of lead poisoning in which there were eight positive Wassermanns. DeBuys reports two children with negative Wassermanns, notwithstanding all four parents had positive tests. In another case, one mother and one twin had negative sera, but the other twin was positive. In some work done in

*Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, May 25, 1915.

1912 and 1913, and published in 1914, by Dr. Holsclaw and myself, we found that in a number of infants at birth and under a month of age, the blood showed a positive reaction although there were no symptoms of syphilis in the child or any known history in the parents. We concluded that in many of these cases there must be some placental effect on the serum.

This brings us to the question of the "salvarsan, or provocative reaction." In several cases of late lues I have seen, the first serum test would be negative, followed by a positive reaction after a liberal dose of salvarsan had been given. Ballenger and Elmer think that the provocative injection is useful in the diagnosis of latent syphilis, and lay much stress on it. A plausible theory is that salvarsan destroys hidden spirochetes and thereby liberates endotoxins which then react to the serum test.

On looking back over a series of cases such as DeBuys reports, we must consider sources of error in the Wassermann reaction.

The first and most important is faulty technic, which is a constant menace to accurate results. I know of an infant recently, jaundiced and edematous, where a positive blood report was sent in. This child was given two injections of salvarsan, died, and was found to have a marked cirrhosis of the liver, with no evidences of lues on autopsy and a negative blood reaction. King-Smith says there is a possible source of error if the blood is taken within thirty-six to seventy-two hours after the administration of salvarsan. Steathy and Bates say that the Wassermann reaction is of little value if the serum is obtained within six months of the last mercurial treatment.

Several cases have responded to a luetin reaction where the Wassermann reaction has been negative, which seems to confirm the opinion of many observers that the former is more reliable in inactive forms of tertiary, latent, and hereditary syphilis, and the latter more accurate in florid syphilis. Noguchi is so convinced of the reliability of his luetin test that he considers its failure to obtain a positive reaction a sure sign that syphilis does not exist.

A most important test in the diagnosis of latent syphilis is the cerebrospinal serum test. Fordyce advocates for diagnostic purposes the combination of the Wassermann test of the blood, and the serological and microscopical examination of the spinal fluid. In cases where this procedure can be properly done, and where the diagnosis is vague, it is a valuable aid. The examination of the spinal fluid shows an increased globulin content and a lymphocytosis. Opinions vary as to the meaning of this test, some believing that the result of such an examination means a meningeal syphilis, and others thinking it goes with a general bodily infection.

In many of our cases the cerebrospinal test seemed to be more delicate than the blood test, and if there was an involvement of the meninges no clinical symptoms of this condition showed themselves.

What value can we put on the negative and positive serum tests? Up to the present time the meaning of a *negative test* in hereditary syphilis is not known. We see many cases in which we find a positive family history with certain clinical symptoms, although the serum tests are negative. This is the type of case where too much dependence should not be placed on the blood test, and a negative diagnosis given, without a thorough study of the child.

With the *positive test,* we all know that different operators have drawn different conclusions from tests of the serum. Two years ago Churchill obtained a positive Wassermann reaction in 39 out of 101 tests. Later, Blackfan repeated tests on these same cases and found only two positive.

Holt, speaking of faulty technic, says that these errors are very common and are almost always on the positive side, so that children are pronounced syphilitic when they are not so. Gradwohl does not consider the serum test an infallible diagnostic index. Churchill believes that a positive reaction means syphilis without need of confirmation by other evidence. Carpenter does not consider the Wassermann reaction as reliable in syphilis of the organs of special senses as in syphilitic disease elsewhere. Wilde reports that he found it very difficult to destroy the positive reaction of hereditary syphilis.

From the above opinions it would be very hard to come to any definite conclusion on the value of a positive serum test. As time goes on, however, and more work is done on the subject, our results will be more uniform. I doubt if any one of us here would pronounce a man syphilitic on the result of a Wassermann test alone; on the other hand, it would be difficult to treat a stubborn case of hereditary lues without checking up our results with a serum test.

Before I leave this particular subject, I would like to mention a point which is of great interest in the treatment of congenital syphilis, and that is the great difficulty we have in obtaining a negative serum after a positive one. Many authors state that in treating a number of cases over a considerable period, the blood of very few of their cases became negative. This we found true in our cases, especially in the older children among whom were many cases of interstitial keratitis.

I might sum up our results in a few words by saying that in infants at birth and under a year, fewer doses of salvarsan have to be given to produce a negative result than in older children. After the first year the syphilitic virus seems to be more persistent and the doses have to be repeated oftener to cause the serum to become negative. I think it is pretty well agreed by most workers that the active symptoms of the disease clear up before the serum becomes negative.

One very valuable thing brought out by the serodiagnosis has been to arouse suspicions of syphilis in unexpected quarters. I saw one little girl lately, eight years old, who had been taken to several dentists because her four lower incisors were undeveloped peg teeth, and her permanent upper incisors had not erupted; other than this the child was a strong, robust girl with no specific

symptoms. Her blood showed a x x x Wassermann, and after five injections in a period of six weeks, her serum is still positive. At the present time the two upper central incisors show evidence of erupting.

Some time ago three cases of chorea were being treated in the children's ward at Lane Hospital. After a routine serum test one showed a positive Wassermann reaction. This child was given two injections of salvarsan in a period of two weeks, and two months later the Wassermann reaction was still positive. The choreic symptoms cleared up, we thought, more rapidly than the other two cases, which were being treated with Fowler's solution.

The newer therapy of syphilis since its introduction has received as much criticism as the serum test. Some think that cases properly treated with mercury and the iodides clear up as quickly as with salvarsan. Others think salvarsan is dangerous and should not be used. Still others claim that they get no beneficial results at all from the drug.

In our cases we have not been able to clear up active lesions or get a negative serum report as quickly with mercury as with salvarsan. In a large series of cases, we have not as yet lost a case or had any bad after effects which we could ascribe to salvarsan when it was given properly. We have had several cases of sloughing in the tissues which was caused by faulty technic and should have been avoided. I feel sure that we would have had good results in some of our old cases if they had been treated more thoroughly, and that a good deal of the criticism given the treatment of hereditary syphilis with salvarsan comes from men who have given only a few injections where many were needed. In children showing the later stages of hereditary lues, such as bone lesions, ocular symptoms, maldevelopment of any sort, etc., a thorough course of treatment covering two or three months should be given. The injections should be repeated every week for from eight to ten weeks at least, and checked up frequently by a serum test. A large series of cases treated in such a manner would be of the utmost value.

The home treatment of luetic children by inunctions and iodides is far from satisfactory because interest in the treatment is lost in a short time by the parents, and as the cases have to be treated over a long period of time many of the cases are lost track of.

Before concluding this paper I would like to discuss the ocular manifestations of the disease which are of such importance.

Stiern has concluded that one-half of all syphilitic fetuses are born alive, and that 80 per cent. of the living half develop some form of ocular syphilis, most often an interstitial keratitis. Dodd says the prognosis is worse in hereditary syphilis than in the acquired form. One author reports 120 cases of ocular syphilis, only 45 of which showed any improvement. He even saw the other eye attacked while treatment was in progress.

Reese considers that salvarsan is an indispensable adjunct to mercury in the treatment of ocular syphilis without, however, being able to replace mercury.

In a series of twelve cases of interstitial keratitis treated with salvarsan by Dr. Holsclaw and myself two years ago, we found that four out of the twelve cleared up and for six months showed a negative Wassermann. These were cases in which the duration of the infection was short. Cases of long duration, with repeated attacks, showed little improvement.

Several cases have been treated the past year in which more frequent doses have been given at shorter intervals, and in some cases followed by the biniodide of mercury, with much better results.

I feel that many of the later manifestations of hereditary syphilis will be eliminated by the careful work now being done all over the country to discover early symptoms in the specific infant. At the Stanford Clinic all cord bloods are examined and the blood of each infant examined before leaving the hospital. As every infant is brought back to the out-patient clinic at the end of six weeks, the suspicious cases can be re-examined and a thorough course of treatment instituted. In many of these cases the disease can be abolished before the end of the first year and the later symptoms avoided.

Discussion.

Dr. H. R. Oliver: About three years ago we began to make routine examinations of the cord blood in the newborn—the easiest way to get blood at that period of life. After doing a number of these, we found that a great many showed a positive Wassermann. We thought there were altogether too many, that there were faults in technic. Testing them out, I found that in these cord bloods there was an anticomplementary substance present in a good number of cases independent of whether there was lues or not. We have made these tests for about two years on about 600 cases; of these 20% to 30% gave positive Wassermanns in the cord blood. This led us to wonder how old a child should be when the blood did not contain some of this complement substance. We then took blood from the infants on the seventh day. We found that in a great majority of cases the anticomplementary substance disappears. In four or five per cent. it continues up to the second week; so that one could not be sure, without going through these tests, that the child had syphilis. However, when we get blood that is markedly syphilitic it shows most positively.

These tests have been corroborated by Dr. Williams' work on placentas from luetic cases in which he was able to demonstrate syphilis. Dr. Stephenson was his assistant, and is now at the college, and this was done by him.

Spurious reactions do not show anything and clear up shortly afterward. However, in some cases that were syphilitic we got negative reactions in the cord blood. All syphilitic children do not give positive reactions in the placental cord blood, but after two weeks give a positive reaction in the circulatory blood.

One has to remember that hundreds of people are doing Wassermann reactions and almost as many methods are followed as there are people doing them. One man uses one sort of antigen, one sort of amboceptor. One uses sheep corpuscles, another goat corpuscles. We find on this coast particularly that the people are great mutton eaters and they contain normal amboceptor for sheep corpuscles, so it has been our habit to use goat amboceptor and corpuscles.

The Noguchi test is not infallible; in fact, the

Noguchi test is not used to the extent it was two years ago. Some use antigen that is not sensitive enough, like extracts of the guinea pig heart muscle. Others a too sensitive one, as human heart muscles plus 4% cholesterin. We went over a large number of cases last month using cholesterin antigen and syphilitic liver antigen in parallel tests. In 400 cases we found that 12½ per cent. gave positive reactions with syphilitic antigen while 32½ per cent. gave positive reactions with cholesterin antigen. What the Wassermann reaction is exactly is not known, and why cholesterin antigen should give 32 and not 100 per cent. is not known, and is one of the things that has to be worked out.

We often found that the mothers of the children gave a negative reaction and the children a positive, and the father a positive reaction.

The action of salvarsan on these infants, especially those that were far gone, was remarkable. Only last month I saw a baby that was about dead with pneumonia (following snuffles); the child had to be fed with a dropper. I gave a fractional dose of salvarsan (1/10 the normal dose) and the next day the baby was better. I gave six doses in all and the child is now apparently perfectly well, takes the bottle, and is doing well. It had mercury rubbed into it two weeks previously without effect.

In regard to the positive and negative Wassermanns, if there is any doubt clinically, it is very easy to find out. If the first test is negative you can give a provocative dose and take the blood ten days later. If it is positive, give ten or twelve inunctions of mercury and then the blood should be negative.

Dr. Kaspar Pischel: I would like to thank our chairman for asking men outside of our section to come here and give us such excellent papers.

I am particularly thankful to Dr. Yerington because he has given me courage to warn you against relying on the Wassermann reaction alone for the diagnosis of syphilis. It would be very pleasant and simple if the Wassermann test could relieve us of the responsibility which necessitates a painstaking physical examination of the patient. The public, unfortunately, considers this test infallible, while we should consider it only as a valuable aid. In several cases in which I diagnosed syphilis in spite of a negative Wassermann, the effect of the anti-luetic treatment proved the correctness of my diagnosis. Such observations have been made quite frequently. Dr. Leo Newmark (Journal A. M. A., January 6, 1912) on the other hand writes about "The Occurrence of a Positive Wassermann Reaction in Two Cases of Non-Specific Tumor of the Central Nervous System." Dr. Yerington's favorable report about the use of salvarsan in interstitial keratitis from congenital lues (See California State Journal of Medicine, October, 1912) was very interesting to me because at the Heidelberg Ophthalmological Congress in 1911, the verdict was nearly unanimous that salvarsan did not hasten the clearing up of the cornea.

Dr. Hans Barkan: I have seen quite a number of cases of interstitial keratitis treated by salvarsan and noted one peculiarity: almost always they were greatly improved after the initial dose as regards photophobia and lachrymation, but so far as I could see there was practically no change in the appearance of the cornea. With the usual dose there would be a period of subjective relief of from five to seven days, then a recurrence of the photophobia and lachrymation, the process itself going on as before. Upon another dose this picture would repeat itself. In a number of cases given repeated small doses the subjective symptoms would certainly be improved but I am not sure about any change in the process itself. In judging the beneficial effect of salvarsan in this condition and in the report of a number of cases one must not forget that, like all luetic processes, there is no common standard; some cases are so light that even without treatment the process is practically completed in a few weeks; some cases so severe that, as in one I have seen, the eye was lost by deep ulceration of the cornea. Between these there are all grades of severity and it is a difficult matter to state with any degree of certainty that one form of treatment has procured decided results. If there is anything in the liberation of endotoxins by the killing of great masses of spirochetes with maximal doses of salvarsan one might expect, especially in view of the fact that interstitial keratitis is probably an aniphylactic phenomena, an earlier appearance of the process in the second cornea in comparison with cases not treated with salvarsan. I do not think that this has ever been investigated and might offer a field for observation. In some cases the shape of the cornea is somewhat longer in the vertical than in the horizontal meridian and this has been pointed out as a stigmata of congenital syphilis. I have measured some corneas and found this to be present, but in a small number only.

Dr. H. B. Graham: It is so easy to fall back upon the serological diagnosis of these cases of syphilis that we are apt to overlook a great many of the clinical signs. I think the general practitioner should know how frequent simple signs are arising in congenital lues. Those such as Hutchinson teeth, deafness, keratitis, the tongue lesions, are well known. There are a good many geographical tongues and tongues with furrows that are not luetic; but many of the patients with lues have furrowed tongues and many have smooth patches on the back of the tongue, all the way from the size of a pea to that of a dime or greater, where the papillae are entirely gone and the mucous membrane is entirely smooth. These will appear for possibly a year, then disappear, or reappear suddenly on the tongue. That these are due to lues I have no doubt. The furrowed tongue is quite characteristic of congenital lues, although I am not saying that you do not get it in cases other than lues.

Another thing not mentioned in most of our textbooks, but which we have noted at the clinic, is the color and consistency of the mucous membrane of the nose. This will become dark, reddened, moist, and so thickened that the nose is stopped up and the patient will complain of a cold. These "colds" last for two or three weeks and no treatment does them any good. They gradually get over these "colds" and are free for possibly three or four months when again they have a similar attack. We have learned in the clinic to make a diagnosis of lues in these cases and as a rule they have a positive Wassermann. I have noticed in private practice that these cases respond very quickly to efficient antiluetic treatment, and mercury, potassium iodide, etc., will prevent these "colds" coming on.

Another sign I have noticed is the instability of the vascular nervous system—blushing of the cheeks, neck and shoulders. This seems to have nothing to do with the mental state of the patient —it is not the blushing you get in a girl, due to her mental state, at all. I have noticed this in luetic patients, especially in congenital lues, where I have not noticed it in others. A great many of these patients are quite excitable and it shows an instability of the whole nervous system.

The condition of the larynx is very much like that of the nose—redness and swelling of the mucous membrane. Luetics do not stand tobacco smoke or alcohol well. The smoking luetic will have a persistent, hacking cough, which will entirely disappear on anti-luetic treatment or giving up tobacco.

Another very interesting thing in these congenital luetics is the presence of anomalies in the func-

tion of the ear—the affection of the cochlear branch of the 8th nerve where the vestibular branch is not affected, or the affection of the vestibular branch where the cochlear is not affected.

In all nerve lesions in congenital lues we find the adequate function disappears first and the inadequate function later. The turning nystagmus will disappear first, and we have non-reaction to the turning motion and still reaction to the caloric. The normal function disappears, but we can still stimulate that nerve by electricity or cold water.

Dr. E. D. Chipman: I can not quite allow the impression Dr. Graham has given concerning fissures of the tongue. The smooth atrophy on the back of the tongue is very significant of lues, but you will often find a fissure of the tongue, and a congenitally grooved tongue when there is no sign of syphilis.

Concerning the transitory and scattered flush areas, while these fugacious erythemas do occur in excitable people, many of the people who are excitable and blush easily are not luetic. It would not be safe to consider this manifestation as significant.

GASTRO-INTESTINAL SYMPTOMS IN DISEASES OF THE CIRCULATORY SYSTEM.

By DR. WILLIAM WATT KERR, San Francisco.

The relation between gastro-intestinal disorders and affections of the circulatory system is not infrequently overlooked, yet disturbed alimentation may be the only indication of weakened myocardium in elderly people or others who are not subjected to sufficient exertion to awake dyspnea, but whose poor circulation leads to portal congestion with its attendant dyspepsia and even more grave consequences.

It is easy to understand that an incompetent mitral valve may result in failure of the tricuspid valve and myocardium, together with portal obstruction and passive congestion of the liver, pancreas, stomach and intestines, so that the function of all these organs is seriously impaired; but there is another group of cases from which edema and valvular murmurs may be entirely absent, where the trouble lies in changes that have taken place in the blood vessels and cardiac muscle as part of the ordinary senile degeneration, or in consequence of disease or dietetic excesses, and these are not so readily recognized.

It must be remembered that the mesenteric vessels are a very common seat of arterio-sclerosis, in fact possibly only the aortic and coronary arteries show a greater susceptibility; and this being the case, it is easy to understand that the organs supplied by these diseased vessels are liable to undergo changes consequent upon their malnutrition, and possibly in some instances as a local effect of the toxins that caused the sclerosis. It is not, therefore, a matter of surprise that such changes as cellular atrophy and degeneration, fibrosis, and even ulceration, should have been found in the affected viscera. The symptoms necessarily vary with the organs whose functions are chiefly involved. The gastric symptoms may be those of chronic flatulent dyspepsia with occasional nausea and vomiting, or those of gastric ulcer, indeed ulceration may be present, so that sometimes it is difficult to decide whether hematemesis is due to vascular erosion or to diapedesis.

Occasionally these milder conditions are supplemented at intervals of one or more days by paroxysmal seizures of gastric pain and distension which may be relieved by belching and vomiting, while in other instances marked dyspnea is present and the abdominal pain is so great that in all probability they are cases of abdominal angina due to spasm of the splanchnic arterioles, a condition to which the smaller sclerosed vessels are particularly prone. Cases of such severity, however, are not very common, or it may be that they are not recognized because the superficial vessels do not happen to be markedly involved.

It must never be forgotten that a comparative healthy condition of the radial and temporal vessels does not by any means warrant the conclusion that the aorta, coronary and mesenteric arteries are likewise free from sclerosis.

The type of cases to which at this time particular reference is made are those where the patient is free from all gastric discomfort with the exception of an occasional feeling of nausea and retching that may be accompanied by faintness and vertigo; or such attacks may occur as exacerbations in the sickness of a patient who continuously suffers from anorexia and nausea. The condition is due to disturbances in the cerebral circulation, and is most frequent in old people.

The following histories will probably serve for purposes of illustration:

(1) A man eighty-six years old, but of active habits, was awakened suddenly during the night by a desire to urinate. Immediately after emptying his bladder he was affected with "a horrible feeling of nausea and faintness, with a desire to vomit." He was given a cup of hot water by one of his family in the hope that it would cause him to vomit, and thus allay the violence of the retching, but he retained it, dropped into a sound sleep, and awoke the next morning none the worse for his experience. Although this man has a considerable degree of sclerosis, yet his heart and blood vessels are in exceptionally good condition for one of his years, so that he is still engaged in active business pursuits. Neither is he subject to any gastro-intestinal discomfort, but has a good appetite, good digestion, and is careful with regard to his diet. The nausea without doubt was due to disturbance of the cerebral circulation in consequence of the sudden assumption of the upright position after being recumbent for so many hours, and was contributed to by the emptying of a distended bladder lowering the blood pressure.

In the foregoing instance, the etiology of the nausea was to a very great extent mechanical in character, but in the following case arterial spasm was the prominent factor.

(2) A lady, seventy-one years old, when traveling in Europe and subjected to considerable fatigue and anxiety, exhibited symptoms of cerebral disturbance for some hours, that were believed to be the result of slight cerebral edema. For several years after this she remained in good health, but had to be careful in her diet on account of dyspepsia. One evening while quietly reading she had a sensation of chilliness and nausea that lasted for a few minutes and then passed away so completely that half an hour later she laughingly

* Read before St. Francis Hospital Clinical Society, October 30th, 1914.

said that she was all right, and probably had been unnecessarily alarmed, but that the sensation while it lasted was "very queer."

Examination failed to reveal anything different from her usual condition, but in compliance with her own request she was allowed to take two grains of calomel. During the next few days she appeared to be in her usual health, but on the evening of the seventh day she had a similar, yet more serious attack, the latter part of which I witnessed.

Like the former, it began with chilliness, nausea and a sensation of oppression over the sternum, and after repeated retching she brought up about two drachms of food that she had swallowed half an hour previously; the pulse became very small, the patient lost consciousness for a few minutes but recovered quickly after an injection of caffeine, so that two hours later she expressed herself as being in her usual health.

Six days afterwards, during an examination of the patient, I noticed that the pulse suddenly became small from contraction of the artery, not from emptiness; simultaneously she yawned repeatedly, shivered, and complained of chilliness, nausea, and oppression over the sternum that rapidly increased to pain. Caffeine and nitroglycerine were at once injected, and soon the radial artery began to relax and the shivering to diminish, but, after an interval of ten minutes, as she still complained of nausea and sternal pain, two drops of spirit of glonoin were placed on her tongue, and this was followed by a general relaxation of all the blood vessels and disappearance of the symptoms.

At this time she spoke quite distinctly, and expressed herself as feeling comfortable, although very much exhausted; but about twenty minutes later it was noticed that her speech had become somewhat thick, and that she had slight difficulty in swallowing.

These symptoms had entirely disappeared by the next morning—probably from absorption of edema.

The nurse told me that on two or three occasions during the preceding week she had complained of nausea, chilliness and praecordial pressure, but had been relieved at once by the administration of caffeine and nitro-glycerine.

In this patient the somatic vessels do not show any marked degree of sclerosis, but it is possible that the splanchnic area is not equally good, as although she never has any acute attacks of indigestion, she always requires some aid to digestion even when following a careful dietary.

Conflicting opinions of physiologists regarding the regulation of the cerebral circulation makes it difficult to interpret the above symptoms. The repeated yawning, so strongly indicative of cerebral anemia, might be explained by the extension of the general arterial contraction to the cerebral vessels. But the more popular physiological belief is that the cerebral arterioles are destitute of vaso-motor fibers, and that the circulation through the brain is regulated by variations in aortic pressure.

This leaves us one of two alternatives; either the contraction of the carotids and vertebrals before they reach the circle of Willis, when vaso-motor control appears to cease, was so intense that an adequate circulation could not be maintained through the sclerosed cerebral arteries; or, what is more in conformity with accepted physiological views, owing to the diseased condition of the entire vascular system the mechanism for maintaining the ordinary physiological relations between intracranial and general arterial pressure was disturbed, so that an extensive spasmodic contraction in the latter areas, which is not uncommon in general arteriosclerosis, was followed by an increased intracranial pressure and a secondary anemia of the centers in the medulla, causing the sensation of nausea and the desire to yawn.

The distinctly perceptible contraction of the radial artery with the simultaneous production of shivering and precordial oppression, rapidly developing into the pain of angina pectoris, all suggested an extensive arterial contraction, both somatic and splanchnic, with consequent rise in aortic pressure and sudden increase in the volume of blood flowing into the less resisting cerebral vessels.

In searching for the etiology of the attack it has been impossible to discover any exciting cause beyond the established fact that the arterioles in sclerosed vessels are particularly prone to spasm.

Enough has been said to emphasize the importance of attempting to discover the particular cause of the nausea in each case, instead of indiscriminately prescribing bismuth, laxatives, or some similar routine treatment. These, without doubt, are most useful adjuvants in cases of passive congestion of the various alimentary organs consequent upon failing compensation, but their sphere is decidedly limited where there is any marked degree of arteriosclerosis.

I do not know of anything more distressing both to patient and physician than the persistent nausea and absolute horror of food that frequently exists in cases of advanced senile cardio-vascular disease.

Here the endeavor should be to restore the balance between the splanchnic and somatic vascular areas that has been upset by the sclerotic process. As the splanchnic area is the one which normally plays the greater part in the adjustment, it is probable that alimentary disturbance indicates an extensive involvement of the arteries supplying the viscera, and this is borne out by the surprising frequency with which we see extensive sclerosis of the superficial vessels without the production of any special symptoms. I have advisedly used the expression "Maintain the balance" because the nausea may be the result of excessive lowering, excessive raising, or irregularities of the blood supply to the brain, and consequently it is sometimes a matter of difficulty to adjust the treatment to the requirements of the individual case.

It might facilitate matters if, for purposes of treatment, each of these cases of nausea was regarded as belonging to one of four groups. (1) Those cases where the nausea is essentially the result of passive portal congestion. (2) Those in which it is mainly due to sclerosis in the mesenteric vessels. (3) Those in which the attacks are only occasional, are cerebral in origin, and consequent upon arteriosclerosis producing irregularities in the blood supply to the brain. (4) Those in which two or more of the above conditions are combined.

In the first group the treatment is based upon the lines usually followed in restoring ruptured compensation; mercurials and laxatives to relieve the congestion, combined with some member of the digitalis group to restore compensation, and possibly during convalescence it may be advisable to ad-

minister hydrochloric acid and nux vomica for the purpose of aiding digestion and giving tone to the stomach.

The second group is not infrequently associated with the production of sternal pain if the patient exerts himself soon after eating. The ingestion of food is normally followed by dilatation of the splanchnic area and an increased flow of blood through the digestive organs whose function is called into play; but the thickening of the sclerosed vessels, together with their increased tendency to spasm, interferes with this necessary augmentation of the blood supply; consequently various degrees of indigestion and nausea ensue.

The best results from treatment are obtained when the diet is regulated by reducing the size of the meals, giving easily digested foods, and limiting as far as possible the consumption of proteids.

The medication consists in regulating the bowels, so that the patient has at least one daily evacuation, and in addition to this, every fifth or sixth day, especially if the patient be plethoric, a mild catharsis should be produced by such agencies as Hunyadi or Apenta water, or any salines of similar character. This may be all that is required, but some cases demand further medication, and at such times theobromine sodium salicylate has been found to yield most excellent results.

This remedy has a selective action for the splanchnic area, and appears to act directly upon the vessels rather than upon the nerve centers. It relieves the vascular spasm, dilates such sclerosed vessels as are still capable of responding to its stimulus, and thus ensures a better blood supply to the different viscera and a consequent increased capability for their functional activity.

Of course, failure may take place from various causes, such as the sclerosis in certain vessels being so far advanced that they are no longer responsive, but it is also possible that the viscus itself has undergone degenerative changes as a result not only of the prolonged sclerosis, but also because the same agents that injured the vessels may have simultaneously exercised a destructive influence on the cells of the viscus. The best results are obtained when the remedy is given fully half an hour before food, as absorption takes place more readily under such conditions, and the blood supply to the stomach in this way anticipates the food that is to be ingested. Five grains is generally a sufficient dose, and in many instances it has to be given only before the heaviest meal.

Where theobromine has failed to give relief I have used the extract of thyroid gland with decided benefit, so that not infrequently the theobromine is used for two or three weeks, and after an interval of a few days the thyroid extract has been substituted for a like period, the two remedies being alternated from time to time with intervals varying in length with the condition of the patient. It appears to be most valuable in those cases of nausea associated with a persistently high blood pressure that do not yield to a strict dietetic and hygienic treatment.

Formerly I combined the thyroid with caffeine to counteract the supposed tendency to cardiac depression, but since Oliver and Schafer ("Regulators of Metabolism," by Noel Paton, page 83, Macmillan and Co., 1913) showed that there is no such action, and that the fall of arterial pressure is simply the result of dilatation of the arterioles, I no longer do so unless some co-existing condition of the heart demands stimulation.

Another advantage possessed by thyroid lies in the fact that it is a sensitizer of nerves influencing the circulation. During the administration of remedies that act upon the vasomotor system one must face the thought that while one result on the splanchnic area, such as dilatation of the blood vessels, may be desirable at some particular stage of digestion or in some organ, it may be that the opposite (a state of constriction) is necessary at some other stage or in some other viscus that is simultaneously in a state of activity, and consequently that the remedy, by a prolonged effect or by an influence antagonistic to the requirements of some other organ, may ultimately do more harm than good.

It is not probable that this objection can be urged universally against the use of thyroid because Asher and Von Rodt state "that thyroid extracts sensitize the nerve terminations upon which adrenalin acts. Upon stimulating the splanchnic nerve the usual vaso-constriction and rise of blood pressure becomes more marked after the administration of thyroid preparations." (Noel Paton, as above.)

As arteriosclerosis is not infrequently found in patients suffering from exophthalmic goitre, it is not likely that thyroid extract has any direct influence upon metabolism that will prevent sclerosis. The dose of thyroid extract varies in different cases, the average being three grains from one to three times daily.

The third group in which the nausea is dependent upon irregularities in the cerebral circulation, requires consideration of the blood pressure and also of the heart before selecting the remedy.

When the general blood pressure is high the best results are apparently obtained from theobromine sodium salicylate, in doses of from five to seven grains three times daily, but if the heart be weak and the pressure about normal or lower, better results are obtained from a combination of small doses of nitroglycerine and caffeine sodium benzoate, with the addition of ten grains of strontium bromide to each dose, for the purpose of allaying the cerebral excitement that caffeine is apt to produce.

Small doses of digitalis may be substituted for the caffeine in this combination, but the latter is more prompt in its action than digitalis and much better adapted for hypodermatic medication.

The fourth group, where we have a combination of circulatory disturbances, is particularly common in old people, because it is in those that sclerosis is best marked, and in addition there are generally senile changes in the myocardium which impair the blood supply to the brain and other organs.

Such cases necessitate a careful scrutiny to detect the preponderating factors, and a combination of

the various forms of treatment already mentioned in proportion to the varying individual demands.

No matter how hard one tries to remove this subjective sensation of nausea, it often happens that all those methods fail. Then all that can be done is to diminish the sensibility of the nerve center, a result which is best attained by the administration of morphine in small doses, one-sixteenth to one-eighth of a grain three or four times daily.

Without doubt it is the beginning of the end, but when the narcotic is given in the smallest effective doses, and in combination with other remedies, it very frequently prolongs life and converts an existence of inactivity and suffering into one of comparative usefulness and comfort.

BENZENE TREATMENT OF LEUKEMIA.*

By W. W. BOARDMAN, M.D., San Francisco.

Of the etiology of the leukemias, we know nothing. The essential morbid process is an excessive and abnormal activity of the leukoblastic tissues of the body, manifested by an increase in the number and an alteration in the character of the circulating leukocytes. A specific remedy would destroy the unknown exciting factor, be it toxic, infectious or what not. Lacking this, our therapeutic efforts are limited to attempts to control the excessive activity of the leukoblastic tissues. For this purpose, arsenic has for years been used; more recently the X-ray, radium and thorium x have been added. With each and all of these measures, striking improvements may occur but with none do permanent cures result. New hopes were therefore raised by Koranyi's [28] report in 1912 of the striking effect obtained with benzol.

Benzol is the loose trade name applied to one of the early distillation products of coal tar, consisting largely of benzene with small amounts of toluene, xylene, carbon disulphid, pentone, thiophane, water and traces of impurities. The name is also incorrectly applied to benzene, a definite chemical compound C_6H_6. Benzol is used industrially as a solvent and several cases of poisoning have occurred among those exposed to its action.

Santesson,[47] in 1897, reported a series of cases of chronic poisoning occurring among the employees of a bicycle tire plant. Four of these cases died. He produced chronic poisoning in rabbits, a characteristic finding being the marked hypoplasia of the bone marrow. Other cases of industrial poisoning have been reported by Gerbis,[17] Beisele,[4] and Schultz.[51]

Selling,[52] in 1910, studied four cases of chronic poisoning occurring in Baltimore, two of which came to autopsy. He concluded from this, and from his animal experiments that benzene C_6H_6 is the active poison in commercial benzol; that the signs of chronic poisoning are giddiness, headache, gastro-intestinal disturbances, pupura and anemia; that the characteristic blood changes are a marked leukopenia with decrease in the granular type of white cell, with relative increase in the mononuclear elements, decrease in the number of platelets, decrease in the amount of hemoglobin and in the number of erythrocytes and an absence of regenerative forms; and finally, that the constant anatomical finding is a marked hypoplasia of the bone marrow. It was therefore evident that in benzene we possessed a substance capable of producing marked hypoplasia of normal bone marrow with a blood picture resembling (except for the more marked leukopenia) an aplastic anemia.

With this action of benzol in mind, Von Koranyi [28] applied it in the treatment of six cases of leukemia. With it he obtained marked subjective improvement, decrease in the size of the spleen and lymph glands, increase in the number of red cells, increase in the amount of hemoglobin and a decrease in the number of leukocytes to normal or practically normal values. There was however a persistence, though in a lessened degree, of the abnormal qualitative findings. Case reports have rapidly multiplied so that at present there are more than one hundred on record. A striking unanimity of opinion exists among these authors regarding the efficacy of benzene. Sixteen out of one hundred failed to show improvement. Another eight cases, although reacting favorably at first, died during or soon after the discontinuance of the treatment. Seventy-five cases, or 75%, showed improvement during the period of observation. Any measure producing improvement in 75% of a large series of patients treated in widely separated sections demands our serious consideration.

In such a consideration there are certain questions to be answered. 1. Is the principle of the treatment sound? 2. Is there any danger in the treatment? 3. Is the improvement real or only apparent? 4. Is the improvement lasting? 5. Is the treatment applicable in all cases? 6. What are the advantages of the treatment over other methods? 7. And finally, what is the best method of applying the treatment?

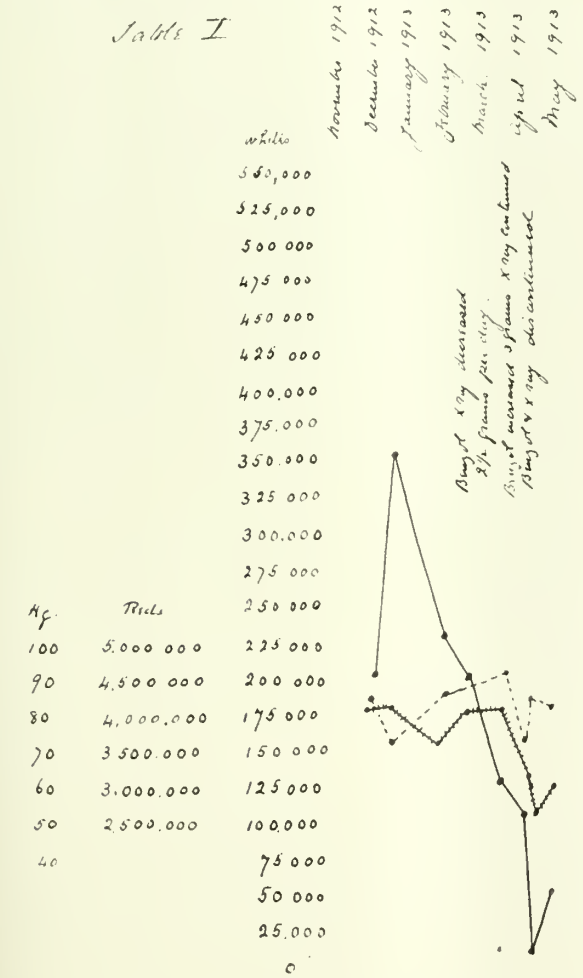
As has been stated, the essential morbid process in leukemia is an excessive and abnormal activity of the leukoblastic tissues. Our problem is to control this excessive activity. We now have abundant experimental and clinical proof that benzene acts upon the leukoblastic tissues, causing a marked decrease in their functional activity in both normal and abnormal states. This is evidenced in the investigation of the cases of industrial poisoning by Santessan, Selling and others, in the experimental work of Santessan, Selling, Pappenheim and others, from the study of several cases of leukemia dying with an aplastic bone marrow from over dosage, and finally by the many successful clinical cases. Therefore, as Koranyi concluded, benzene meets this first requirement.

A second and more important requirement is that benzene, in exerting its effect on the leukoblastic tissues, shall in no way seriously injure the body as a whole or any of the individual tissues. Reports show the occurrence, during the administration of benzene, of gastro-intestinal disturbances, headaches, dizziness, skin eruptions, bronchial irritation, kidney irritation, marked leukopenia, hemorrhages, increasing anemia and death. The cases of industrial poisoning confirm these

* Read before the San Francisco County Medical Society, March 2, 1915.

findings as do the results of animal experiments which show also the occasional occurrence of liver degenerations.

The gastric symptoms are most common, resulting from the local irritation or the gastric mucosa by the benzene. They vary from mild burning, distress or regurgitation to troublesome hiccough and complete anorexia. The severe manifestations are usually prevented by care in administering the drug. It has been given in oily emulsions and in milk but neither method is to be recommended. The best results are obtained by giving it with an equal quantity of olive oil in gelatine capsules which should always be taken during or immediately after a meal, never on an empty stomach. If gastric symptoms still persist, salol coated capsules may be substituted for the gelatine, thereby preventing the liberation of the benzene in the stomach. In some obstinate cases it has been administered with olive oil per rectum with satisfying results. In a few, it has been given subcutaneously,[25] also with satisfactory results except for the pain at the site of injection. The latter method is however not to be recommended.



The occurrence of persistent headache and dizziness are danger signals indicative of chronic poisoning and do not occur in the ordinary course of treatment.

Skin eruptions have been reported by Billings and Klein. In Billings' case it followed an error in dosage, the patient taking large doses for a considerable period. Klein's case followed subcutanetous injection of the drug.

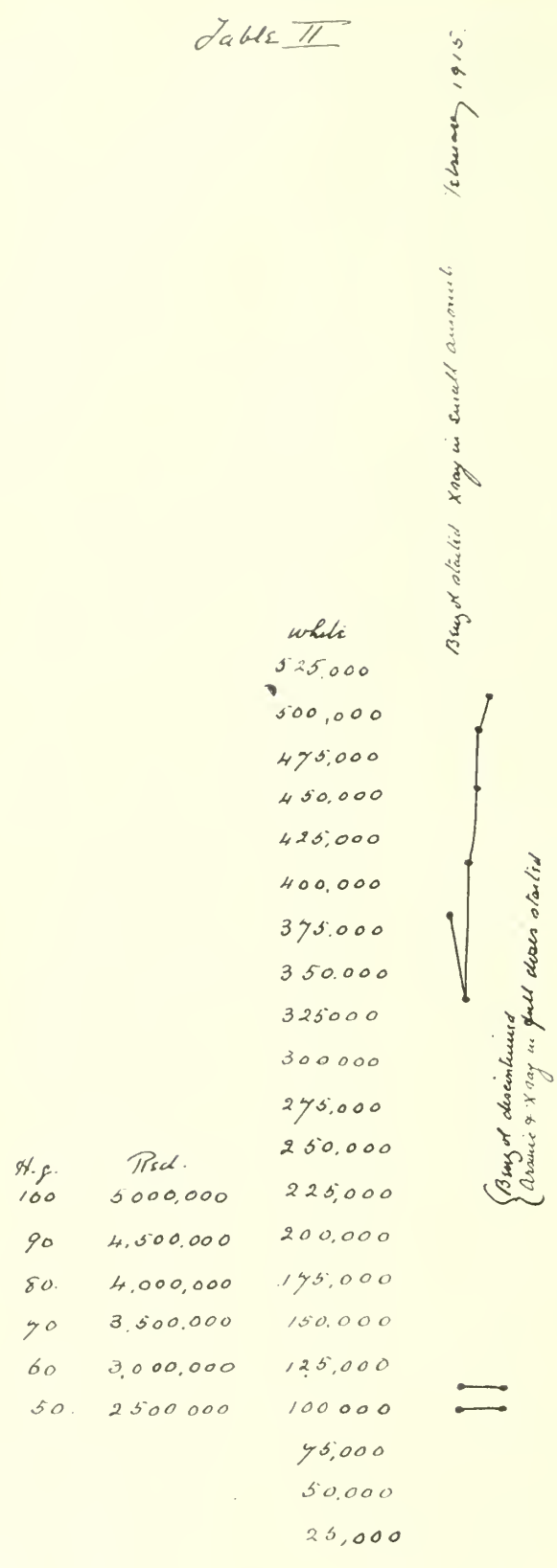
Klein advises against its use in pulmonary tuberculosis and bronchitis, but Betke reports a case in which a bronchitis cleared up during treatment and I have had a similar experience. No other report of its harmful action in pulmonary tuberculosis has been encountered and I should hesitate to consider it a contra-indication.

Benzene is oxidized in the body to phenol and dioxybenzol and largely but slowly excreted from the kidneys as phenol-sulphuric and phenol glycuronic acids and the corresponding dioxybenzol compounds. The passage of these substances through the kidneys may give rise to some irritation and albuminuria. Türk, Wachtel and others have reported the occurrence of albumin and red cells in the urine during treatment. The majority of observers have not encountered this complication and although it should be carefully watched for, there is apparently but little chance of its occurrence.

A marked leukopenia has been a constant finding in the cases of industrial poisoning and in the experimental work. It has now been reported in several of the clinical cases. Thus Meumann reports a case from Voit's clinic in which the white cells dropped from 56,000 to 5,000 per cubic mm. in a short time. At this point benzene was stopped but the cells continued to decrease, finally reaching 200 per cubic mm. The patient developed severe nosebleed and died thirty-nine days after discontinuing the drug. Autopsy showed aplastic bone marrow and central necrosis of the liver. A similar case is reported by Stein in a girl of 18 years in whom the white cells decreased in sixteen days from 73,000 to 8,000 per cubic mm. At this point benzene was discontinued but the leukopenia progressed, reaching 460 per cubic mm. Nose bleed developed and the patient died twenty-two days after discontinuing the drug.

These cases emphasize two points. First, benzene is a dangerous drug whose action may proceed too far, resulting in an aplasia of the bone marrow and death. Second, the action of benzene persists for a considerable period after stopping its administration. These facts do not contra-indicate its use but point to the necessity of carefully controlling its administration and discontinuing it before its action upon the bone marrow has reached the danger point. This may be readily estimated by a study of the white cells; the majority of observers agreeing that a fall in the count to 20,000 or thereabouts speaks for a withdrawal of the drug. If the fall be slow, it may be cautiously given in decreased amounts. With such precautions, the white cells will usually continue to decrease to approximately normal values without the occurrence of the hemorrhages or other complications.

The occurrence of hemorrhages under the influence of benzene has been reported by Santassen, Selling, Neumann, Stein and others. It is a sign of severe poisoning and usually occurs only



where the treatment has been pushed too far, as in the cases of Neumann and Stein cited above. Barker suggests that one factor in the occurrence of these hemorrhages is the decrease in the number of blood platelets which, as Duke and others have shown, occurs with large doses of benzene. Hemorrhages should not occur in the carefully controlled cases.

The behavior of the hemoglobin and red cells is of interest. Marked and increasing anemia of the aplastic type has been a constant finding in the fatal cases. The successful clinical cases have usually shown an increase in the number of red cells and in the hemoglobin. Türk reports one exception and others have reported a primary decrease followed by a subsequent rise. It has been stated that benzene exerts a selective action destroying the leukoblastic while stimulating the erythroblastic tissues. Türk suggests that the increased functional activity of the erythroblastic tissues may result from the decrease in the pressure exerted upon them as a result of the destruction of the over-active leukoblastic tissues. Experimental evidence is at hand to show that benzene in moderate doses, while causing degenerative changes in the leukoblastic tissues of the bone marrow, produces no evident injury of the erythroblastic tissues. In larger doses, however, the erythroblastic tissues undergo degenerative changes also. We may conclude then that benzol in the usual therapeutic doses causes an increase in the number of red cells and in the percentages of hemoglobin.

The deaths which have occurred under benzene have resulted from over dosage and cannot be used as an argument against the drug.

Pappenheim, in animal experiments, found necrosis in the periphery of the liver acini after large doses of benzol. Neumann and Muhlmann report liver necrosis in their fatal cases. In Neumann's case the necrosis was central and there is some doubt as to its nature. Türk concluded from some rather meager metabolism studies that there was no disturbance in liver function in his cases. At any rate in the ordinary therapeutic administration properly controlled, there has been no evidence of liver injury and it need not be seriously considered.

From this review, we may conclude that although benzene is a dangerous drug, there is no reason to fear serious injury to any of the body tissues if it be given with due care and the blood and urine frequently examined.

Pappenheim and Sohn concluded from animal experiments that there was no destruction of the leukocytes in the ordinary therapeutic doses, and that the apparent decrease was explained by their accumulation in the central veins. They also concluded that doses sufficiently large to cause a real improvement in the blood would result in serious degenerations in the liver and kidneys. In the light of more recent work the conclusions of these investigators cannot stand, and we must admit that benzene produces a real decrease in the number of circulating white cells by directly destroying or inhibiting their formation in the leukoblastic tissues.

The majority of the reported cases have only been observed a few months, but the evidence shows the improvement to be but temporary. In a period varying from a few weeks to a year the white cells increase in number and the various

symptoms reappear. (Sappington and Pearson), (Rubmayr).

The return of symptoms is usually gradual but there may be a rapid return of severe symptoms ending in death. (Jespersen and Graham.) Such happenings are occasionally seen in the ordinary course of the disease and cannot be ascribed to any action of the benzene.

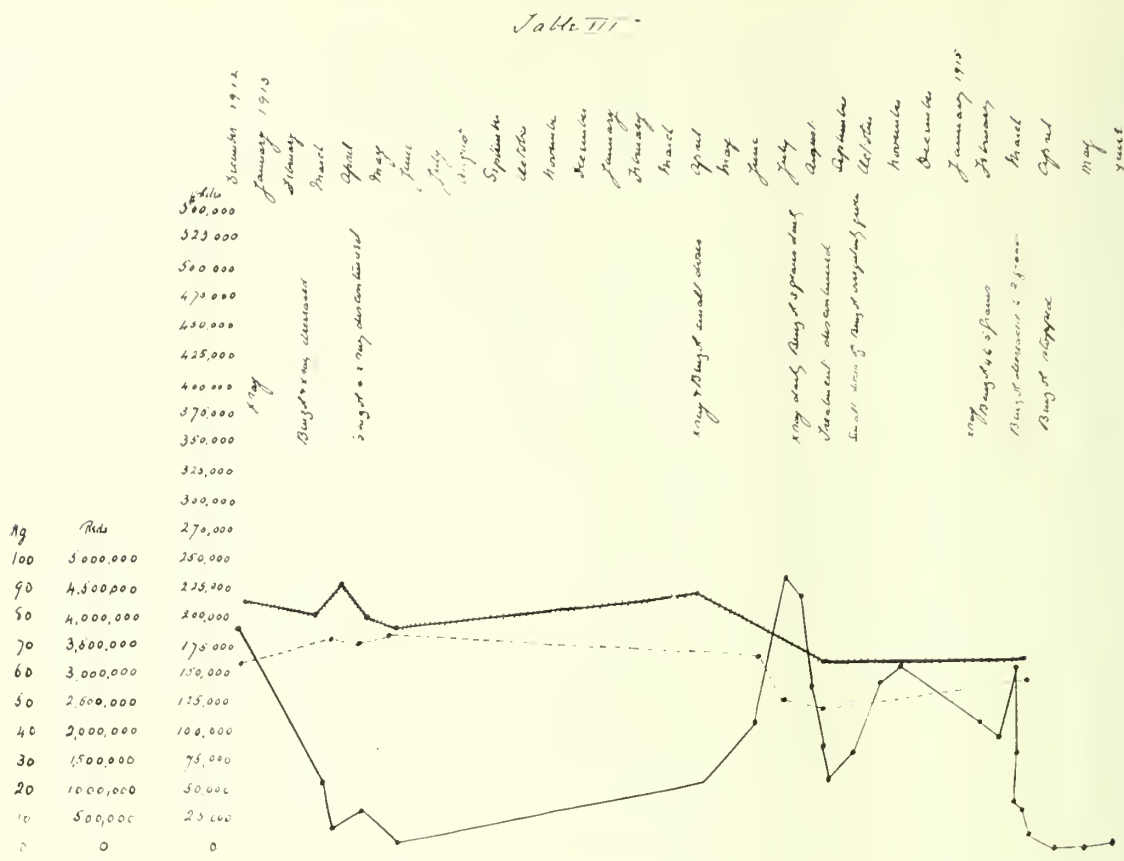
Various observers have, from a limited experience, warned against the use of benzene under certain conditions. Thus we are advised against its use in bronchitis and pulmonary tuberculosis by Klein and in severe anemia by Türk. Neither one of these conditions appears to constitute a real contra-indication, as cases of bronchitis have cleared up during treatment. Also, the majority of cases show an increase in the hemoglobin and red cells. The presence of kidney involvement is a more serious matter and the possibilities must be carefully considered, the urgency of the leukemic condition balanced against the severity of the kidney lesion, and the possibility, which from their reports seems slight, of aggravating the condition. Betke reports a case showing a slight cloud of albumin in the urine which cleared up during treatment.

Another matter for serious consideration is the control of the patient during benzene therapy. As we have seen, it is a dangerous remedy and should only be administered under the strictest supervision. On this ground Barker advises its use only in hospital practice. Billings also feels that the results of treatment are less satisfactory in ambulatory patients. There seems to be no appreciable difference in its action in the chronic myelogenous and lymphatic cases. Some have concluded from limited observation that it acts more efficiently in one or the other type but the general impression is that it is equally effective in both. In the myelogenous type there is a greater relative decrease in the percentage of myelocytes in the circulating blood than in the lymphocytes in the lymphatic type. A few cases have shown absence of myelocytes but this is unusual. (Billings.) The acute leukemias are apparently uninfluenced. (Sappington andPearson.) We may conclude that benzene is applicable in the treatment of all cases of chronic leukemia, provided they can be kept under careful supervision, due consideration being given to the presence of any kidney lesion, or to the occurrence of any complication.

The results of benzol therapy are more uniformly favorable than those of arsenic. The X-ray is said to produce improvements in from 20 to 50 per cent. of patients, while benzene apparently accomplished this result in a greater percentage, possibly 75 per cent. However, the majority of these cases have also received X-ray treatment. And it is generally accepted that the improvement is usually more marked when the X-ray and benzol are used conjointly than when either is used alone. Several cases have resisted through X-ray treatment to subsequently respond to benzene, and on the other hand cases have resisted benzene but shown rapid improvement with the X-ray. Benzene has the advantage of being less expensive, and it is also available to those who cannot obtain proper X-ray treatment. The results with radium and thorium x while apparently quite satisfactory are not considered here.

In applying the treatment, the method as suggested by Von Koranyi has proven most satisfactory. The benzene is given in gelatine capsules containing 0.5 gm. of the drug and an equal amount of olive oil. The capsules should be filled shortly before taking and should be swallowed during or immediately after meals, never on an empty stomach. On the first day four capsules or 2 grams are administered, on the second day six capsules or 3 grams, on the third day 8 capsules or 4 grams, and on the fourth day and thereafter 10 capsules or 5 grams. This dose is continued with frequent blood examinations until the white cells have decreased to about 20,000 per cubic mm. when the drug should be discontinued if the fall has been rapid, or materially reduced and carefully watched if the fall has been more gradual. Smaller doses are recommended by some. The dose may be varied between three and five grams per day, depending upon conditions. Five grams seems to be the accepted maximum. With large doses the effects are more quickly obtained. Other methods of administration have been referred to and need not be again considered except to say that the salol coated capsule may be substituted for the gelatine capsule if stomach symptoms become disturbing. Rest in bed is advisable during the early days of the treatment, Billings being convinced that the results are more readily obtained with the patients at rest than with them up and about. The remainder of the treatment is symptomatic, but the value of arsenic must not be forgotten. As has been stated, it is generally believed that a course of X-ray treatments accelerates the action and in the present state of our knowledge all cases should, if possible, receive X-ray together with the benzol. We must emphasize again the necessity of frequent examination of the blood and urine.

With such a plan of treatment, either the benzol alone or combined with the X-ray, we find in the average case a primary increase in the number of white cells usually lasting from 10 days to three weeks followed by a more or less marked drop with an increase in the reds and hemoglobin, decrease in the size of the spleen or glands and general subjective improvement, with increase in weight and strength, usually allowing a return to the ordinary routine of life in from three to twelve weeks. It must be borne in mind that these favorable results do not always follow; that a certain number of patients will not tolerate benzol; others will present some complication, such as kidney irritation, and still others may fail to react to the benzol in the doses given. The advisability of increasing the dose above the maximum 5 grams prescribed might be considered in the latter class, but the weight of authorities is against such a procedure. Türk, in his series of nine cases, discontinued treatment in four because benzol disagreed. Two more showed no im-



provement after ninety and sixty-four capsules respectively with subsequent improvement under X-ray. Another showed general improvement with decrease in leukocytes but with a decrease in reds and hemoglobin and the appearance of albumin in the urine. Two cases only showed satisfactory results. It is probable that the results would have been more satisfactory if he had persisted in the treatment, especially in the two showing no improvement after ninety and sixty-four capsules respectively, as the cells may remain high or more often increase during this early period to subsequently fall rapidly if the drug is continued. However, Koranyi in reporting eight cases had to give up the treatment in one as the patient could not take the benzene and in another because it had no evident effect. The X-ray failed in this case also. There are probably many more cases which have failed to react satisfactorily to benzene that do not appear in the literature. The general feeling is that benzene and the X-ray are about equally successful in the chronic leukemias, but that the combined treatment is more successful than either alone.

My personal experience with benzene has been limited to the treatment of two cases of chronic lymphatic leukemia and one case of chronic myelogenous leukemia.

Mr. W. J. W. Age 61, presented himself at the Stanford University Medical Clinic in November 1912, complaining of enlargement of the glands of the neck and axilla with increasing weakness. Family history unimportant.

Past history showed usual diseases of childhood, jaundice at 10 years, typhoid at 50. Right hand amputated 30 years ago after an accident. Patient had lived in California and Canada, engaged in farming. Denied lues and excesses of alcohol and tobacco. Average weight 165 lbs.

Present illness began three years ago with swelling of the glands on the right side of the neck, later involving the glands on the left side and more recently the glands of axilla and inguinal regions. No pain or tenderness, some loss of strength, occasionally fever.

Examination showed a well built, poorly nourished man, tonsils large, mass of enlarged, hard, movable glands on both sides of neck in both axillae and in both inguinal regions. Liver 12 cm. in nipple line edge palpable. Spleen reaches to umbilicus, not tender.

Nov. 21/12 (Table I). Blood: Red 4,250,000; Hg. 77%; W. 210,600; Lymp. 96%.

Dec. 5/12. X-ray was begun treatments being given over the glands, spleen, and long bones. The blood at this time showed red 4,250,000; Hg. 64%; W. 353,000; Lymp. 97%.

Jan. 22/13. Patient was feeling somewhat improved. Blood showed reds 3,600,000; Hg. 78%; W. 234,800; Lymp. 98%. X-ray was continued but in small amounts.

Feb. 20/13. White cells numbered 202,000. Benzol was now administered in five drop doses in gelatine capsules three times a day after meals and increased to gtts. ix.

Mar. 1/13. Patient complained of marked weakness, fever and headache, which persisted for several days. Glands and spleen showed marked decrease in size.

Mar. 7/13. Blood showed reds 4,100,000; Hg. 83%; W. 132,000; Lymp. 99%. During March the X-rays were given about every third day in small amounts.

Mar. 21-13. Benzene increased to gtts. xii four times a day. At this time the blood showed reds 3,200,000; Hg. 63%; W. 103,000; Lymp. 88%.

Mar. 31/13. Blood showed reds 2,520,000; Hg.

78%; W. 18,000; Lymp. 77%. The glands and spleen continued to decrease in size with improvement in general condition. Benzene and X-ray now discontinued and patient put on Fowler's solution.

Apr. 8/13. Blood showed reds 3,150,000; Hg. 75%; W. 52,600; Lymp. 89%.

Apr. 10/13. Patient left for Nova Scotia.

Apr. 30/13. Reported by mail that he was feeling well and strong. No subsequent report has been received.

The second case, Table II, Mr. R., age 56, came to the Stanford University Medical Clinic Jan. 26th, 1915, complaining of swelling of the ankles and weakness.

Family history showed tuberculosis on both sides of the family. Past health has been good except for measles, diphtheria, scarlet fever and chicken pox during childhood, with malaria in 1884 and articular rheumatism in 1905. Neisser 24 years ago. Moderate user of alcohol. Average weight 155. In September, 1914, patient noticed some swelling of the ankles and shortly after a "hardness" under the left costal border, which slowly increased in extent, finally reaching the region of the umbilicus. Patient has noticed no particular change in general health except slight loss in weight and strength.

Examination showed some cyanosis of lips, enlargement of heart to the left, sounds clear. Liver not palpable, spleen enlarged to umbilicus, hard, not tender. Pitting edema of legs, few enlarged lymph glands in neck, axilla and groin, none larger than an almond. Urine showed specific gr. 1.020, albumin and hyaline and granular casts.

Blood showed 2,900,000 reds, 50% Hg., 384,000 whites, 98% lymphocytes, 1.75% polys., 0.25% eosinophiles. The lymphocytes were large, averaging that of the normal polymorphonuclears and many showed two nuclei, evidently from "recent mitoses." (Addis.)

Course. Patient was put to bed and given seven drops of benzene in gelatine capsules with olive oil. On Feb. 3, 1915, he received three capsules and on each succeeding day one capsule was added until eight were given daily, or a total of 56 drops per day. This dose was continued until Feb. 28th without discomfort to the patient. During this period he received two X-ray treatments over the spleen and three over the long bones.

The blood has shown the following changes:

Feb. 1—Reds, 2,900,000; Hg. 50%; Whites, 384,000; Lymph., 98%; Poly., 1.75%; Eosino., .25%; Baso., .25%.

Benzol started:

Feb. 9	334,800
Feb. 12	420,000
Feb. 19	456,000
Feb. 21	488,000
Feb. 27	512,000

With the urinary findings and the absence of evident improvement, I reluctantly discontinued the benzene on Feb. 28th, and began more energetic X-ray therapy combined with arsenic.

The third case is Mrs. W., age 49, who came to Lane Hospital in December, 1912, complaining of headaches, pain and swelling of left side of abdomen and increasing weakness.

Family history unimportant.

Past history showed the usual diseases of childhood, typhoid at 15 years, diphtheria at 25. Otherwise patient has been very well. Married eighteen years, four healthy children.

Present illness began in 1910 with severe sick headaches especially at the time of the period. These increased in frequency and severity, patient feeling below par. In February, 1912, patient noticed dull pain under left rib border, tender to pressure, relieved by bending over; disappeared in a few days to return with each headache which now occurred about every two weeks and were accompanied by severe vomiting and prostration necessitating a stay in bed of two or three days. During the summer of 1912, the pain in the left side became more constant and severe, preventing the wearing of corsets. Patient had to sleep with a little pillow under left back.

In October, 1912, began to sweat at night, especially about the head. Periods had now stopped; patient had lost 15 lbs.; felt weak and useless. At the end of October, 1912, noticed a swelling in upper left abdomen for which she sought medical advice.

Examination unimportant except for the marked enlargement of the spleen, which reached to the umbilicus and was very tender to pressure.

Dec. 7/12. Blood examination showed Reds 4,400,000; Hg. 65%; Whites 198,400, with 55% myelocytes.

Course: Patient was given X-ray treatments over the long bones and spleen together with Fowler's solution in moderate doses.

Jan. 1/13. With some improvement in the general symptoms the white cells numbered 100,000.

Feb. 15/13. Benzene was begun in five drop doses t.i.d, increasing to xii gtts t.i.d. by Feb. 25/13.

Feb. 20/13. Blood showed Reds 4,150,000; Whites 58,000, with no decrease in the myelocytes. Benzene was continued, being increased on March 10th to xv drops t.i.d.

Mar. 7/13. Blood showed Reds 4,500,000; Hg. 74%; Whites 21,000, with 17% myelocytes.

Apr. 4/13. Patient was feeling very well, spleen about normal size, X-rays at infrequent intervals. Benzene discontinued. Blood showed Reds 4,000,000; Hg. 72%; Whites 32,000.

May 4/13. Patient had practically no treatment during the month. Blood showed Reds 3,324,000; Hg. 75%; Whites 10,000. Patient now felt perfectly well, was free from headaches, sweating and vomiting, spleen was not palpable, had regained her weight and strength and usual good spirits. Treatment now discontinued and I saw no more of her for eleven months.

Mar. 30/14 she returned, stating that she had remained perfectly well for five months, at the end of which time menstruation appeared for the first time since February, 1912. Headaches now returned, spleen began to enlarge and the old symptoms gradually returned. Patient tried self medication, taking arsenic and trying benzene. The latter she discontinued as it caused gastric distress. Examination showed the spleen again enlarged, reaching to the umbilicus. Blood showed reds 3,860,000; whites 56,400; myelocytes 37%. X-ray and benzene in ix gtts doses three times a day begun and continued through May with some improvement.

June 1/14. Blood showed Hg. 67%, whites 116,550, myelocytes 36%, but general condition seemed very much improved. However during the last two weeks of June patient began to lose ground and was advised to enter hospital. Blood at this time showed Hg. 50%, whites 228,000, with 52% myelocytes.

July 7th entered hospital. Given X-ray treatments over long bones and spleen. Benzene in gtts xv t.i.d. and injection of sodium cacodylate.

July 14th white cells numbered 209,000.

July 21st whites were 138,500. Patient had to leave hospital but continued on benzene.

Aug. 5th the blood showed reds 3,250,000, hg. 48%, whites 80,000.

Aug. 11th whites numbered 60,000. Patient now felt well and discontinued treatment.

Sept. 7th, feeling pretty well but whites had increased to 80,000. Benzene begun in vii drop doses and increased to xv t.i.d. Patient did not do so well, was tired and weak.

Oct. 7th the whites had increased to 145,000. Patient advised to come to the city where treat-

ment could be carefully watched. Benzene discontinued.

Oct. 30th whites had increased to 153,000 and all the manifestations were much more severe. Patient procrastinated about coming to the city, attempting again self medication with small doses of benzene and arsenic.

December, 1914, patient took severe cold and was confined to bed from this time with marked manifestations of her disease—sweats, vomiting, fever, enlarged and tender spleen, weakness, etc. Patient was treated by a local physician during December and the first part of January, 1915, with arsenic, but showed no improvement.

Jan. 19/15 patient came to the hospital in an ambulance, very weak, severe cough with profuse expectoration, temperature 100°, pulse 100. Many rales throughout chest, no impairment of resonance, spleen markedly enlarged, reaching to umbilicus and extremely tender to pressure. Blood showed 107,000 white cells with 9% myelocytes. Patient given short X-ray treatments daily with inhalations of comp. tr. benzoin, and with creosotal by mouth for the bronchitis.

Jan. 27/15 benzene was started in vii-drop doses t.i.d. and rapidly increased to ten capsules of vii drops each. With this dose patient complained somewhat of gastric distress so the amount was decreased to six capsules per day and later increased to a total of 60 drops per day, which dose has been continued with occasional decrease. General condition began to improve soon after admission.

Feb. 3/15 the blood showed 96,000 whites with 25% myelocytes.

Feb. 17/15 the whites had increased to 158,500.

Feb. 24/15 they had dropped to 86,500, with marked improvement in general condition. The cough had completely disappeared, the spleen was half its original size and no longer tender, and the patient was spending her days up and about.

Feb. 26/15 whites dropping rapidly, 60,000.

Since the preceding report the blood examinations have shown the following, the only treatment being X-ray applied over the spleen once per week.

March	5/15	Whites	20,600
March	12/15	"	14,000
March	19/15	"	8,800
April	20/15	"	5,200
May	7/15	"	4,200
May	28/15	"	9,400
June	11/15	"	8,600

General condition remains satisfactory.

One is not justified in drawing definite conclusions from three cases. However, these cases illustrate some of the points emphasized by others and from these cases and the reports of others, we may conclude:

1. That the principle of the treatment is sound.

2. That, with proper precautions, there is no appreciable danger in using benzol.

3. That the improvement is a real improvement and not due to accumulation of the leukocytes in the central vessels.

4. That the improvement is only temporary, as in our other methods of treatment.

5. That the treatment is applicable in all chronic cases of leukemia. Bronchitis and anemia cannot be considered contra-indications. The presence of nephritis is a more serious complication and demands more careful consideration.

6. That the treatment is more readily administered and is less costly than the X-ray and may be given to those unable to obtain X-ray. That the percentage of improvements is about the same under benzol as under X-ray.

7. That the drug is best administered in freshly filled gelatine capsules with an equal amount of olive oil; the maximum daily dose not to exceed five grams. The treatment must be carefully controlled by frequent blood and urine examinations and discontinued if there is evidence of kidney irritation, or when the leukocytes reach values of 25,000 to 20,000.

8. That the best results follow the combined benzol and X-ray treatment, the benzol effect apparently being increased by a preliminary X-ray treatment.

9. That some cases will not respond to benzol in the usual dosage and in the usual time, and that others are unable to take the drug owing to gastro-intestinal disturbances, etc.

10. And, finally, that when carefully administered and carefully controlled, benzene is apparently a valuable addition to our methods of treating chronic leukemia.

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THE BLOOD IN LEUKEMIA.*

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Leukemia is a malignant (idiopathic) hyperplasia affecting the leukocytic forming tissues, which results in an enormous increase in the production of the white blood corpuscles. This hyperplasia may affect only one type of cell, and there may even be a diminution of the other varieties of leukocytes, or there may be an increase of all varieties, with one type considerably more than the others.

Hughes Bennet in 1845 first described a case of suppuration of the blood or leukocythemia. A short time after 1845 Virchow described a case and gave it the name "leukemia." It was not however until some time later that Ehrlich, by his new method of staining, showed that in the two types, the cells were different.

The leukemias were formerly divided, according to their clinical aspects, into the lymphatic, splenic, spleno-medullary, and medullary or myelogenous forms. This has given way to the hematological one of Ehrlich of lymphatic and myeloid, based upon the kind of cell proliferation.

It has been shown by Nieman that in lymphatic leukemia the proliferation is not limited to the lymph glands alone, but may affect the lymphoid tissue of the spleen, the nodes and crypts of the intestines, and the bone marrow.

The enlargement of the spleen may be great, without any specific change in the character of the leukemiac process, or of the appearance of the blood. In spite of the splenic tumor the case is one of lymphatic leukemia. There has not been a single case of a pure splenic leukemia reported.

Acute lymphatic leukemia was first described by Friedich in 1857. (In a new case of leukemia.) These cases run an acute course with high fever, pronounced hemorrhagic diathesis, and terminate fatally in a short time. We have noted three such cases:

1st; A young man, 26 years of age, whose first symptom was a severe ulcerated throat, which became gangrenous. It showed a streptococcus infection and was treated for such. On further examination, on account of nasal hemorrhage, it was found he had an enlarged spleen. The blood showed 60,000 cells of the lymphocytic type. Death occurred in two days. Necropsy showed no special enlargement of the lymph glands. The spleen was quite large, but the bone marrow was typically that of lymphatic leukemia.

2nd; A woman of 36 with the same symptoms, with a gangrenous lymphatic pharyngeal ring, without a particularly marked general lymphatic enlargement. The bone marrow showed the typical leukemic changes.

3rd; A child of 5 with what was diagnosed as malaria, but upon examination of the blood a lymphatic leukemia was found. This child grew rapidly worse and died in two weeks.

The cells in these cases were of the lymphoblastic type, with a large nucleus and small rim of deep staining cytoplasm. The parent cell is the lymphoblastic macro-lymphocyte, or large lymphocyte. Their appearance in the blood except in children denotes an acute or chronic leukemia. They present the same characteristics as the small variety except in their great size, and that they contain two nucleoli. Amitosis is present. In some mild chronic cases the cells are not nearly so large, in fact are about the size of the ordinary small lymphocyte. In one case a man with a large spleen who was very anemic, was found to have a marked anemia of the primary type. His leukocytes were 4,000 with a differential count of 98% of small lymphocytes. It was shown that it was a lymphatic leukemia in which there was an anemia of the primary type. Upon rest in bed and treatment, the leukocytes gradually increased in number until in one month there were 160,000. all of the small variety; shortly after larger ones appeared, then the lymphoblasts. He died shortly after. Necropsy showed a moderate enlargement of the spleen with a few mesenteric lymph glands enlarged, but others not enlarged. The bone marrow was typically lymphoid. The difference between the above lymphoblasts and lymphoid myelocytes or leukoblasts (Pappenheim) is that the latter is a feebly basophile lymphoid cell with the nucleus of a myelocyte but the cytoplasm is devoid of neutrophil or eosinophile granules. They do contain however an azurophile substance such as is seen in both normal and pathological varieties of lymphoid cells.

They are now granular myelocytes with basic cytoplasm. This leukoblast with large indented nucleus is a sort of pathological monocyte and can

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seldom be distinguished from the macro-lymphocyte, or the monocyte of normal blood. The lymphoidocyte is often markedly basophilic and beset with a (myeloid) azur substance; its nucleus is leptochromatic and frequently contains several sharply defined nucleoli. It has a basic protoplasm. The nucleus stains pale in comparison to the surrounding narrow zone of more or less strongly basophilic cytoplasm.

Between these cells and the fully developed myelocyte there are various stages of genetic transition. The nucleus becomes more round, more basophilic and contains a fair number of neucleoli. These are the cells which are present in acute myeloblastic leukemia.

Just as the macrolymphocyte is the precursor of the small lymphocyte, so the lymphoidocyte gives rise to a daughter strain in the small pathological lymphocytes formed in the bone marrow, or myelo lymphocytes, which are remarkably similar to normal lymphatic lymphocytes. These macro lymphoidocytes stain like the lymphoidocytes.

In the acute leukemias, these forms are seen, especially in infiltrations. It is difficult to differentiate between the large celled lymphatic leukemia and a myeloblastic leukemia. The so-called mixed type of leukemia, or in those types in which there is a so-called change to the myelogenous type, that the forerunning cells were really lymphoidocytes and myeloblasts, and not true lymphoblasts. This is observed in chloroma, where there are microscopic infiltrations and even small tumor masses. This condition is now conceded to belong to the myelogenous type, rather than the lymphatic.

In the myeloid type there is an absolute increase of several varieties of cells, mostly of the granular type. There is also an absolute, though not a relative increase in the lymphocytes, polymorphs and eosinophiles. These granular cells descend from the leukoblast or myeloblast through the promyelocytes, the myelocyte, the metamyelocyte, to the polymorphs. Here it is most difficult to form a line of division between the metamyelocyte with its slightly irregular or deeply indented nucleus and clearly neutrophilic protoplasm, and the true polymorphs. It has been observed by me that a large number of these cells, when stained with Wright's stain, show at their border a deep blue rim of rod-like granules. Owing to the lack of a definite line of division, one is apt to err on the side of the myelocyte in making a differential count. It occurred to me that one method of settling this would be by determining their functional power. By using a cream of the leukocytes from a case of myelogenous leukemia, I tested their phagocytotic power, and found that the so-called metamyelocytes took up the bacteria just as well as did the polymorphs, while the neutrophilic, basophilic, eosinophilic myelocytes did not engulf them at all. These metamyelocytes are also noted in cases of irritative or toxic leukocytosis. So I would class them as young polymorphs and count them as such.

In the myeloid form the bone marrow shows a great hyperplasia of these elements, and so the lymphatic forms show lymphocytes. Some believe that they are always distinctly separate diseases. In some cases there need be little change in the spleen or lymph glands, being confined to the bone marrow. (This was nicely illustrated by one case of lymphatic in which the symptoms were those of a tabes dorsalis, and only when the blood was taken for a Wassermann was the true condition found. In this case there was no enlargement of the spleen or lymphatics.) However, hyperplasia may take place in any of the blood-forming organs or possibly two or more at the one time, then extend to the whole system, though some,—Nieman, Pappenheim and Grawitz,—claim that it always arises from the bone marrow. Its method of spreading to the general system is not known, whether by metastasis, as in tumor growth (Banti, Warthin), or to stimuli which causes the primary foci (Ehrlich, Lazarus, Pincus). Their claim is that there are two kinds of marrow, the lymphatic corresponding to the lymphatic organs, and the medullary; that when the entire bone marrow is stimulated, myeloid leukemia results, and when the lymphatic tissue, the lymphocytic type. They admit however a primary stimulus to the spleen and lymph glands, causing an increase in size, as in pseudo-leukemia; and that the lymphatic tissue of the bone marrow is secondarily involved; that owing to the unyielding character of the bone, the lymphocytes are forced, as it were, into the circulation.

It would seem that myeloid transformation could be regarded as a return of the blood-forming organs to their embryonic activity, as in some cases of lymphatic leukemia, a myeloid transformation is found in the lymph glands. There is however a general infiltration of all the organs and their sinuses with these cells.

Ehrlich defines lymphatic leukemia as belonging to tumor growth or functional overactivity, and myelogenous to a form of exaggerated leucocytosis, where the different varieties of granular cells react to a stimulus, or chematactic reaction. It is thought by many that both types are due to a common pathogenesis of unknown origin. There have been claims that it was due to a spirochete. Levit claimed a motile hemameta. These have not been confirmed.

Hirschfield and Jacoby claimed to have transmitted it in the leukemia of chickens, even using a filterable virus, which has not been confirmed. Banti argues for a sarcomatosis, and it is surely difficult to tell the exact difference between the hyperplasia in leukemia and the neoplastic overgrowth in sarcoma, their histology being so close, and as there are all grades from benign lymphoma pseudoleukemia, to lymphatic leukemia, and lymphosarcoma.

Warthin regards these different types of lymphocytoma as genetically related, being the same disease with different degrees of severity. Some are leukemic on account of the excess of leukocytes in the circulation, some aleukemic, both showing the same infiltration, and that aleukemic cases become leukemic. He divides them into

Aleukemic (1) where there is no absolute or relative increase in cells; (2) where there is a normal count and relative increase; (3) a pure typical lymphatic leukemia; and lymphosarcoma with great excess of cells with a large percentage of lymphocytes. With this he includes chloroma, with its greenish tumors and leukemic blood, and the myelomata showing myelocytes in the blood.

Secondary leukocytosis and lymphocytosis are often seen and indicate irritation of the hemopoetic organs. That is a reactionary condition, due to an irritation of a chemotactic nature, or due to a primary irritation as a direct toxic metaplasia of the leukoblastic tissue. The former is an active and the latter a passive leucocytosis.

The leukemias due to hyperplasia and the leukocytosis resulting from a toxic metaplasia are of a passive nature, i. e. repulsion leukocytosis. Functional leukocytosis and lymphocytosis due to chemotaxis are of active or reactionary character. Generally however active functional leukocytosis is associated with some cause leading to metaplasia. Acute leukemias due to an infection ought perhaps rather be classed among the metaplastic leukocytosis rather than among the actual hyperplastic leukemias. At the same time transition forms might exist between the toxic metaplasia on one hand and metahyperplasia on the other; that is, a hyperplasia combined with a metaplasia.

In certain infectious diseases after the administration of certain drugs, and protein, we may have a decided leukocytosis with myelocytes, lymphoidocytes, and especiallly large numbers of *meta myelocytes,* as in diphtheria pneumonia. That is a reactionary metaplasia. After such drugs as philocarpine, tuberculin, whooping cough, we have the large unripe lymphocyte.

On the other hand, during the course of a leukemia, there may be a great reduction of cells with intercurrent severe infections, as sepsis and erysipelas. These generally terminate fatally, or the picture resumes itself after the trouble has subsided. A pernicious anemia may take place with a leukopena. Hence the old term "aleukemic leukemia of Von Leube." As the patient recovers from the anemia the leukocytes increase. In one case where the spleen was extirpated some seven years ago, shortly after the operation the blood showed 80,000 cells with 20% of myelocytes. In a few weeks the number of cells was reduced to 11,000, where they remained three years. The blood showed a perfect picture of a primary enemia, though the reds were 4,000,000. The Hb was 90%. There still remained 5% of myelocytes in the blood. The patient is still alive and apparently well, though an examination of the blood has not been made for some time. He has suffered a severe pneumonia with emphysema following and has fully recovered.

ROENTGEN RAY TREATMENT OF LEUKEMIA.*

By HOWARD E. RUGGLES, M.D., San Francisco.

Since the cases of Schultz in 1901, Pusey in 1902 and Senn in 1903, the reported cases of leukemia treated with Roentgen rays run well into the thousands.

The usual results are more or less rapid improvement in general condition, lowering of white count, and return of differential count to normal. Subsequent relapses are common and are usually difficult to control. Faithful persistence with the treatment and intelligent dosage diminish the possibilities of relapse. There are a good many cases in the records which have been symptomatically well for periods of over five years. Contraindications are: 1, acute type; 2, presence of increasing anemia, cachexia, or fever.

Pathology. The primary effect of radiation is degenerative. In 10 to 14 days lymphocytes, myelocytes, myeloblasts, and even polymorphonuclears show swelling of nucleus and fragmentation of chromatin. Protoplasm is at first unchanged; later it becomes clear or vacuolated, and then the cells disappear. After prolonged courses of radiation a secondary reactive effect appears. Myeloid cells completely disappear from the lymph nodes and spleen and the organ becomes a fibroid mass containing scattering lymphoid cells. Spleens frequently show anemic infarcts, thrombosis of vessels and obliterating endarteritis.

Technic. Success depends entirely on the way radiation is given. There is considerable discussion as to whether the long bones or the spleen should be exposed. Probably the best results are obtained by exposing both, although the following report of a case which we have been treating at St. Luke's for two years shows that treatment of the spleen alone will give the desired result. As to actual technic, we use a tube backing up a five and one-half inch spark, a target skin distance of 10 inches, 1 mm. of aluminum filter and an exposure of 20 milliampere minutes. With our apparatus that is one-half an erythema dose; it is applied every two weeks alternately on abdomen and on back.

Our case is a girl who came to the hospital February 9, 1913, complaining of weakness, shortness of breath and pains in arms and legs which had lasted two months.

Examination showed a somewhat undersized girl of 13, with a spleen two inches below and two inches to the right of the umbilicus, with a white count of from 250,000 to 600,000.

X-rays were started at once, but in weak doses which did very little good. Benzol was tried for a short time with no effect. In August, 1913, the present technic was begun. The count began to fall immediately, and to-day the girl is absolutely

* Read before the San Francisco County Medical Society, March 2, 1915.

well to all intents and purposes, and has been for the past six months. Her spleen is normal in size.

The white blood count is 6,500 to 8,000.

Hemoglobin 95
Red cells 4,200,000
Differential count:
74% polys.
20 small lymphocytes
Balance large lymphocytes and eosinophiles.

Remissions in the treatment have been followed at once by the reappearance of myelocytes.

This is an unusually favorable case, and such striking results cannot always be obtained. However, we can promise reduction in white count, in size of spleen, and great subjective improvement. In common with other methods of treatment of this condition, the Roentgen-ray is altogether palliative, but its ease of application and greater uniformity of results should recommend it.

Discussion.

Dr. Thomas Addis: I enjoyed Dr. Oliver's paper very much, not because I agreed with it—in fact, as far as the scheme on the board goes, there are few points on which I can agree with him; but then everyone knows that there are about as many different schemes for the development of leukocytes as he has figures on the board.

There are many points I should like to discuss with Dr. Oliver, but it would take too long and I shall have plenty of opportunities for talking them over with him later. But I cannot refrain just now from disagreeing with his arrangement by which red blood cells are shown as developed from lymphoidocytes. I know that he has authority for that, but I think the evidence is very much against it. I think it is much more logical to assume that during adult life the red and the white blood cells are distinct as regards their origin, and that even the granular type of cells and the lymphocytes develop from entirely different parent cells. I do not think we ever see mixed leukemias—I do not think there is such a thing as a myeloid and lymphatic leukemia combined. I simply mention these points, not that my opinion is more likely to be correct than Dr. Oliver's, but simply to point out the fact that the whole subject is in a state of flux and not much importance can be attached to any statements on these points. Possibly some light may be thrown on the subject by the fact that some one states he has succeeded in cultivating some of these early forms of white blood cells and has succeeded in making one cell develop into three or four types of cells by slight alterations in the media.

I think the most interesting remark Dr. Oliver made, and I wish that he had enlarged somewhat upon it, is that when he took the blood in the case of myelogenous leukemia and mixed it with staphylococci he found that the propolymorphs and fully developed myelocytes took up these organisms. He did not, I think, mention the fact that the earlier forms did not phagocytose the staphylococci. He showed me the smears he had made. It is an interesting and important point, for it indicates that immaturity of structure is accompanied by an absence of one of the active functions of the more fully developed cell.

I wish Dr. Oliver had been able to show us tonight some of the very excellent specimens he made from these myelogenous cases—colored photographs that were really beautiful.

Both Dr. Boardman and Dr. Ruggles made the remark that the benzol and X-ray treatments are sound theoretically. I do not think you can say they are any more sound theoretically than the present surgical treatment of cancer. The only really sound treatment theoretically is one aimed at the removal of the cause of the condition, and neither benzol nor X-rays get down to that in any way. From a practical point of view this is the most interesting point in regard to these leukemias.

Dr. H. C. Moffitt: We naturally see quite a number of leukemias, as it is a fairly common disease among us, and one cannot help comparing the patients one sees since the use of benzol and X-ray with those when arsenic was the only treatment.

There is no question of the marvelous effect of both X-ray and benzol, and no one would want to do without them in the treatment of leukemia; yet there is no doubt that since the treatment with either of these agents we see more leukemias suddenly changing from the chronic picture into the acute fatal cases. There is danger with either method of treatment apparently, no matter how carefully the technic is followed. It is usually wise, therefore, to begin your treatment in these chronic cases with arsenic, and try whether you are having any particular influence with proper doses of the drug.

It is not unusual to see cases of leukemia which we know to have gone about town for six, eight or nine years. One case which we had last year in the hospital had been given a bad prognosis nine years before. When the woman came to us here leukemia was unmodified by any method of treatment, including a careful trial of arsenic.

One has to bear in mind, as Dr. Boardman well said, the possible dangers from benzol, and as far as our experience has gone it is not possible to measure the danger entirely by the number of leukocytes. For instance, in one woman the leukocytes fell rapidly and the spleen diminished rapidly under the use of benzol. Treatment was stopped when the leukocytes were about 60,000, but notwithstanding, they fell rapidly until below 3,000. With this came a picture of aplastic anemia and at first glance the woman had the typical facies of pernicious anemia; but, as in the case Dr. Oliver described this evening, it was not of course a pernicious anemia, but simply a leukemia which benzol had transformed to a picture of aplastic anemia. There were hemorrhages, the blood plates were extremely low, and we were fearful of a fatal result. Arsenic had no influence at this period, but under repeated small subcutaneous blood injections there was quite a prompt reaction of the bone marrow, and this woman went from an acutely dangerous condition to one that permitted of her doing her housework. She is now apparently well, but the leukocytes have again changed their picture to conform to the myelogenous type. At one time the woman was apparently perfectly well except for the enlarged spleen, the blood picture being absolutely normal.

I would emphasize the value here—as in cases of pernicious anemia with inactive bone marrow—of small injections of blood. One does not need large transfusions or intravenous blood injections; 3 to 5 cc. suffice.

As Dr. Boardman says, a good many of the cases one sees treated with benzol do not follow the description of Koranyi, the reds and hemoglobin both rising; in fact, you frequently see a drop in the reds and in the hemoglobin as well.

The X-ray before benzol enabled quite a number of chronic cases to improve very definitely. I remember a case I saw with Dr. Harris. A man with a tremendous spleen was benefited by the X-ray and went through a number of years quite comfortably. Probably the wise thing to do (after a preliminary arsenic course) is to use a combination of the X-ray and benzol, carefully watched; and as Dr. Boardman says the only place to treat these cases is at home or in a hospital where the blood can be carefully watched.

Quite recently I have seen blood from leukemia with one of the rare complications—embolism of a large artery. A leg had to be amputated, and whether it was following some suppuration or infection at the time, or possibly from the loss of

such a large part of the bone marrow, the patient has clinically improved quite marvelously.

This is not the place to dwell very much upon some of the diagnostic difficulties one meets. Throat complications, as Dr. Oliver says, are always suggestive of acute leukemia. Last May I saw with Dr. Jellinek a woman who apparently had the mouth lesions of acute leukemia. A streptococcus was cultured from the throat. She went down rapidly and in a week or ten days the leukocytes dropped to 800—over 90% were lymphocytes. Clinically the picture was one of acute leukemia. There was moderate enlargement of the spleen. Under leukocytic extract the young woman improved and the blood became normal. Retrospectively the case was one of acute sepsis and not acute leukemia.

Not long ago I saw skin nodules which proved to be part of a lymphoid leukemia. In New York Dr. Longcope showed me a breast which had been removed by a surgeon as the seat of some malignant tumor, and which afterward proved to be a lymphatic leukemia. The blood picture would have definitely shown leukemia at the time of operation.

We undoubtedly should use both X-ray and benzol, but I heartily agree with what Dr. Boardman and Dr. Ruggles said as to the necessity of keeping careful watch not only of the leukocytes, but of the red cells; and I should add very definitely, of the blood plates.

Dr. H. R. Oliver: The schematic diagram was for the purpose of showing in a lucid way the derivation of the leukocytes. The red cells were drawn in to show that they also in the embryonic period had their beginning in the same parent cell. There must be a beginning somewhere, and this is one of the ways it has been explained. In regard to the phogocytosis, I believe I stated that clearly in the paper.

It has been my personal experience that in the cases treated by X-ray, whether they apparently recover or not, the blood picture shows evidence of a primary anemia—that is myeloblasts, normablasts, megolocytes, poikilocytosis with a high color index.

Dr. Ruggles' case shows a high index, and I presume the smear would show the primary anemia picture.

"SHALL THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA HAVE AN EXAMINING BOARD?"*

By WILLIAM TAYLOR BARRY, M. D., Santa Barbara.

Twenty years ago the examining board for the state *was* the medical board of the State Medical Society,—the recognized legal (per act of Legislature) certificate-granting body for California. The methods of this board were extremely simple. Upon the presentation of a diploma from a recognized chartered medical college, and the payment of a fee of $5.00 for registration, license to practice medicine in the state of California was issued. Since that time numerous changes in the medical law have been arrived at, down to the present year with its composite Board of Medical Examiners—together with reciprocity with certain states. Now the question is: "Shall the Medical Society of the State of California Return to First Principles—*with this difference?*" Not again seeking a legal authority to examine and pass upon the credentials of persons wishing to practice medicine in our state, but to have an examining board, acting under the sanction and authority of the State Medical Society, to receive, examine and pass upon the credentials—educational, scientific, professional and moral—of all candidates for membership in the State Society, and to issue certificates of membership, or of recommendation for membership, to the successful applicant. The county unit, of course, not to consider the application of any physician *not* possessing such certificate of recommendation from the central board of examiners. It is intended that this board of medical examiners be permitted to charge a reasonable fee, and that the change not to go into effect before 1918—all members prior to that date being naturally excepted. The reason for this proposition is to enable the State Society to cut entirely loose from the composite Board of Examiners acting under state and legal authority—other than recognizing their certificate or license to practice medicine and surgery as the necessary and legal foundation to start from in considering applicants for membership in the State Medical Society. In other words it is intended to interest ourselves *less* in trying to make the legislature enact sane, reasonable and proper medical laws for the protection of the people and scientific medicine, and *more* in seeing to it that only the properly equipped, educationally, scientifically, professionally and morally, be recognized as our fellow. We may be powerless to compel the state legislature to pass righteous medical laws, but *no* legislature or governor can force into the Medical Society of the State of California a person judged unfit or unworthy by our own board of examiners. To quote from our able state secretary, Dr. Philip Mills Jones:

"The weakening of the medical practice law, which continues bravely on from legislature to legislature, will surely mean an influx of undesirables, and a lowering of the value of any sort of license to practice. It will also mean, if we make it so, the vastly increased value of membership in a recognized County Medical Society. Keep that thought in mind."

Dr. Jones in recent editorials is constantly urging all County Society secretaries to report to the State Society office the names of applicants for membership before electing them. And with the Santa Barbara County Medical Society it is now *mandatory* upon the secretary to so act. And Dr. Jones is perfectly right in his position, for the County Society *is,* under present conditions, the *door* to the State Society. Now your speaker is proposing to exactly reverse this, and to make, through a board of examiners, the State Society the *logical door* to the county unit. In other words, he respectfully suggests that the tail has wagged the dog long enough, and asks that the dog commence to wag the tail.

* Read before Santa Barbara County Medical Society on June 14, 1915, afterwards revised and by request repeated before a Joint Session of Ventura and Santa Barbara County Medical Societies on July 12, 1915.

THE ROUTINE EXAMINATION IN A GENERAL HOSPITAL FOR DIPHTHERIA CARRIERS AND A NOTE ON THE SCHICK REACTION.*

By W. T. CUMMINS, M.D., PHILIP KING BROWN, M.D., and C. L. BITTNER, M.D.,

Harriman Laboratory, Southern Pacific General Hospital, San Francisco.

Modern medicine has made no advance more important than that concerning the prevention of disease. The eradication of yellow fever in Havana is a brilliant example of the potency of prophylaxis. Vaccination, the study of water supplies and sewage disposal, and other hygienic measures have had a marked effect in reducing the morbidity of typhoid fever. The dissemination of certain infections, of known and unknown etiology, is brought about in many instances by the harboring in the tissues of the recovered individual or of the healthy "contact" the infectious agents. Notable among these diseases are typhoid fever, epidemic meningitis, diphtheria and probably pneumonia and poliomyelitis. Today, the subject of "carriers" commands our attention and the laboratory must be prepared to examine excreta for the presence of typhoid bacilli and nasal and throat secretions for meningococci and diphtheria bacilli.

A summary of statistics shows that about one per cent. of healthy throats yield diphtheria bacilli on culture. According to Jordan one to two per cent. of all persons give positive cultures, but of these about 17 per cent. only are virulent strains. Park and Beebe found that about 2.5 per cent. of individuals, not having been in contact with infection, showed bacilli. European and American statistics on the presence of Hofmann's bacillus in the upper respiratory tract show wide latitude. In New York City, Park noted that one per cent. of nasal and throat secretions showed this organism, while Jordan found 16 to 22 per cent. In England, Graham-Smith found 20 per cent. among poor adults and 9 per cent. among the well-to-do. With examinations on series of 200 or more "non-contact" adults, positive findings vary from 0 to 97 per cent.—the highest in Europe.

An important aid in the study of diphtheria is the Schick [1] immunity test, which consists of the intradermic injection of a freshly standardized diphtheria toxin so diluted with normal saline that 0.1 or 0.2 c.c. contains 1/50 M L D for a 250-gram guinea pig. With less than 1/30 of a unit of diphtheria antitoxin in the patient's blood serum per c.c., a positive reaction ensues, which consists within twenty-four hours of the development of an hyperemic areola measuring 5 to 25 m.m. in diameter and more or less induration. The maximum intensity is usually reached at about forty-eight hours and thereafter for a week there is a progressive decline of color to a brown with which there is more or less desquamation. A pseudoreaction (probably protein hypersusceptibility) is one in which hyperemia and induration develop more quickly and have almost disappeared at the end of forty-eight hours, There is less pigmentation and desquamation is absent. A negative reaction implies immunity to diphtheria. It is necessary that the toxin be intradermically administered, preferably on the flexor surface either of the upper- or fore-arm with a sharp, fine needle.

Park, Zingher and Serota [2] have reported on the examination of 700 children in the Willard Parker Hospital, New York City, and noted that the period of greatest susceptibility to infection is between the ages of two and four years, that the children of the same family give usually a similar reaction, etc. After a very complete description of the technic, etc., they conclude that "(1) The Schick reaction served as a reliable and convenient index of the susceptibility or non-susceptibility of individuals to diphtheria. (2) It served also as an accurate clinical test to determine the efficiency of active immunization with mixtures of diphtheria toxin and antitoxin. (3) It has helped us in the diagnosis of clinically doubtful nasal diphtheria . . . (4) It has added further experimental proof to the clinical experience that very toxic cases of diphtheria require the early intravenous administration of large doses of antitoxin . . ." Bundesen [3] has reported on 800 Schick tests and notes the similarity of statistics given by Schick, Park and himself relative to diphtheria hypersusceptibility, as elicited by the reaction, and the reported cases of the disease in infancy and childhood. Among his concluding statements he notes that the test permits of a great reduction in antitoxin bills and that the possibility of anaphylactic shock is greatly minimized by its use. Graef and Ginsberg [4] have reported on the reaction which was carried out during a diphtheria epidemic among nurses. Moody [5] found in the study of 316 children prophylactically injected with 1000 units of antitoxin that immunity is effective for a period of less than four weeks in over one-half of the total. Kolmer and Moshage,[6] Weaver and Maher,[7] and Moody and Woodruff [8] have also reported on the Schick reaction.

Personal Observations. During the past several weeks there have been an abnormal number of diphtheria cases in San Francisco and vicinity. An examination of the throats of the patients (adults), internes, nurses, orderlies and porters in the Southern Pacific Hospital was made to determine the percentage of "carriers" in a general hospital, their infectiousness, etc. The period of study extended over 41 days. A swab was made in each case from the naso-pharynx; a Löffler tube was inoculated and two smears made. All tubes were incubated for about sixteen hours and smears were stained by the Löffler method. Two hundred throats were examined and none showed diphtheria bacilli. Twelve of 171 persons (7 per cent.) gave a history of diphtheria. The remainder (29), foreigners, could not interpret questions satisfactorily relative to their history. None gave a history of recent exposure to diphtherial infection. Twenty-seven, or 13.5 per cent., of the cases showed Hofmann's bacilli. Nine cases showed fusiform bacilli and one, spirilla, and two cases showed both. One showed a yeast.

The Schick test was carried out on 44 adults. The toxin was obtained through the courtesy of the

* Presented at the Pan-American Congress, Section on Medicine, San Francisco, June 18, 1915.

Cutter Laboratory, Berkeley, and was diluted freshly for use so that 0.1 c.c. represented the standard quantity. The flexor surface of the upper-arm appeared preferable to the fore-arm for intradermic administration. A 1 c.c. elongated Burroughs-Wellcome syringe with No. 1 gauge needle was used. Thirteen, or 29.5 per cent., reacted positively. The most severe reactions were elicited in three individuals who gave a history of having had diphtheria. Two pseudoreactions were noted in the same group. One case of diphtheria was present in the hospital and received 15,000 antitoxin units. On the ninth day the first of three consecutively negative throat swabs was obtained.

CONCLUSIONS. Throat examinations of 200 adults in a general hospital showed no "diphtheria bacilli carriers." Of these 7 per cent. gave a history of having had diphtheria but in no instance was it a recent infection. Hofmann's bacilli were found in 13.5 per cent. of the total cases. About 30 per cent. (44 cases) were Schick positive and the strongest reactions were noted in three individuals who had had diphtheria. Those who have reported on the Schick reaction uniformly attest to its value.

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PATRONIZE THOSE

WHO

PATRONIZE

YOUR

JOURNAL

BANTI'S DISEASE.

By HENRY H. LISSNER, M.D., Los Angeles.

Mr. P. L. Age 25 years. Occupation, salesman. Married. One child.

Family history: Father died suddenly by accident. One brother and one sister died in infancy, the cause is unknown to patient. No tuberculosis in family.

Personal history: Had malaria seventeen years ago in New York. Measles when a child. No history of typhoid fever, rheumatism or pneumonia. At the age of twelve years he was taken to a physician who informed his mother that his spleen was enlarged.

Present history: Began about three months ago with itching of the skin. He then noticed that he was getting yellow; this condition would clear at times, and then again, would become more intense. No chills, fever or pain in the region of the liver or gall-bladder at the time of the onset of the jaundice; neither was there any nausea or vomiting, or stomach pain present. Bowels were always regular, two or three movements daily, sometimes quite pasty and soft, but other times formed stools with a tendency to normal color. He had pain twice in right iliac region just below McBurney's point, which always came on following exertion as walking or climbing. This pain lasted about ten minutes and was relieved by his assuming a recumbent position. About eleven days ago he noticed that he was beginning to swell particularly high up in the abdomen; no pain accompanied the swelling, just an uncomfortable feeling. This swelling has gradually increased up to two days ago, when he thinks it came to a stand-still. He belches some at present. His appetite is good. No shortness of breath, except on exertion. No palpitation. He has a cough at present, but previous to this illness he never had a cough. He raises some white, glary mucus. He has no hemoptysis. No night sweats. Nocturnal urination once or twice, but this was always his habit. Skin itches constantly, but worse at night. His habits are good. Sleep is O. K. He is of the opinion that he has lost about twelve pounds in the last twelve weeks.

Examination: Eyes, reaction to light and accommodation normal. Sclera is jaundiced, as is also the skin. Nothing abnormal found in the neck; no glands or pulsations. Throat is normal in appearance; tonsils not enlarged. Lungs; impaired resonance over right apex but no change in breath sounds. No retraction of apices. Excursion of diophragm on both sides normal. Heart; left border apparently at left nipple line, right border at right sternal margin. Accentuated aortic second. No audible murmurs. There was no marked precordeal impulse. Liver; upper border of liver dullness in fifth interspace in the nipple line. Not able to palpate or percuss the lower border of liver dullness, because of extreme distention of the abdomen. No tenderness of liver. Spleen: Upper border of dullness in the left anterior axillary line in the sixth interspace. The lower border runs into abdominal dullness due to the fluid; palpating for the spleen elicits tenderness in this area. Abdomen is distended, the fullness being most marked below the xiphoid where prominence is decided. There is dullness in the flanks which is replaced by tympany upon change of position. No points of tenderness in the abdomen, except in the splenic region. No edema of feet. Pulse rate 60. Respiration 18. Temperature 97°.

On January 15th three pints of green fluid were obtained from the abdomen by the trochar; following this, the liver could be palpated; the edge was smooth, not tender, about one inch below the costal margin. The spleen is palpable with a large, smooth definitely rounded border extending forward from the costal arch on the left side to

within an inch of the median line and about on the level with the umbilicus. Following the withdrawal of the fluid the patient felt a little more comfortable, and was placed on a light diet. The 24 hour quantity of urine was 30 ounces. Temperature 97°. Pulse 54. Respiration 19.

The blood examination made on the 25th of January shows hemoglobin 30%; white blood corpuscles 12,000; red blood corpuscles 3,000,000; differential count practically normal; marked poikilocytosis with indefinite plasmodia. He was placed on hypodermics of 1% solution quininurea 5 c.c. daily for three days, and then given 5 grs. of quinine by mouth, because of the painfulness of the injection. After the first dose of quinine by mouth he complained of dizziness and an uncomfortable feeling; was unable to stand or sit up and seemed quite exhausted. In the afternoon of this same day he was lying in a delirious or subsultus stupor unable to speak. This condition lasted 24 hours and passed away without further difficulty. The quinine was discontinued.

Between the 15th and 30th of January the 24 hour quantity of urine varied between 30 and 40 ounces. The abdomen began to get larger, and the patient felt extremely uncomfortable, so that it was necessary to perform a second paracentesis, when three gallons of fluid were withdrawn. After the second tapping the spleen could be definitely made out as described above; but the liver border was not palpable below the costal margin. The Wassermann reaction done by Dr. Walter Brem was negative.

An operation for the removal of the spleen was arranged for the 12th of February. The patient was taken to the operating room at 10:05 a. m. and returned from the operating room at 11:55 a. m. He was given 10 c.c. of horse serum subcutaneously before the operation, which was performed by Dr. D. W. Edelman.

On the 15th of February the red blood count was 1,990,000; white blood count 36,400. Differential count: polymorphonuclear 95%, large 5%. No lymphocytes. No eosinophiles. Transitional 4 cells. Nucleated reds, two seen. Mast cells also present. Hemoglobin 30%. Marked poikilocytosis and irregularity of the size of the red blood corpuscles.

The bowel movements the third day after the operation were large and almost white. On the fifth day after the operation he had epistaxis for the first time; this occurred again on the following day, after which 20 c.c. of horse serum was given daily for six days, and then discontinued, because of no further hemorrhage. Blood coagulated on the ear very quickly.

On the 25th of February the blood showed 55% hemoglobin; white blood corpuscles 19,000; red blood corpuscles 2,530,000. All white cells took a faint stain; the bodies showed neutrophilic granules while the nucleui stained a very faint blue. A few gigantoblasts were seen, but on the whole the red blood corpuscles were more even in size. Poikilocytosis was not as marked. Differential count: polymorphonuclear 95%, large 5%. No eosinophiles or lymphocytes. Urine: 24-hour quantity between 40 and 50 ounces.

On March 7th ascites was still present, and on March 12th we started the administration of theocin sodium acetate tablets, one every three hours. (See table of urinary amount for effect.) After the first two days the theocin tablets were continued, one tablet three times a day. With the administration of theocin and the increase of the urine, the ascites gradually diminished until the time of his discharge from the hospital on the 7th of April, when it had practically disappeared.

On the 2nd of April the blood count was as follows: hemoglobin 55%; white blood corpuscles 12,000; red blood corpuscles 4,120,000. The differential count: polymorphonuclear 84%, large 11%, small 1%, eosinophiles 4%. There was some difference in the size of the red blood corpuscles, but no poikilocytosis and no nucleated red cells.

On the 21st of May the blood showed: hemoglobin 75%; white blood corpuscles 9,000; red blood corpuscles 3,610,000. Differential count: polymorphonuclear 61%, large 25%, small 12%, eosinophiles 2%.

Ascites at present has absolutely disappeared. Patient's weight on April 14th was 128¾ pounds, and at the present time it is 156 pounds.

November 14, 1914. He has been back at his work for several months, suffering no inconvenience, and doing his usual duties. The blood is as follows: hemoglobin 90%; while blood corpuscles 9,200; red blood corpuscles 4,080,000. Differential count: polymorphonuclear 57%, large 14%, small lymphocytes 25%, eosinophiles 4%. Nothing abnormal in the red blood corpuscles.

When one considers the literature on the subject of Banti's disease, and the allied conditions which may cause the typical syndrome as originally described by Banti, one is immediately impressed with the chaotic evidence in the reports, and numerous conditions calling forth such a reaction from the organism, which at once makes the direct classification of any one of the various splenomegalies a most difficult procedure. Lues, malaria, tuberculosis, certain forms of infectious diseases may be exciting causes in the production of the condition, but each in turn causing certain atypical symptoms or pathological findings, which do not fit into the general picture. A change in spleen pathology, a different liver picture, an atypical anemia, a different relationship of white blood corpuscles, both as to type and number of cells, hemorrhage or no hemorrhage, etc., have all been present or absent in the various cases reported as Banti's disease.

Bearing the fact in mind that there is no definite clinical or pathological picture to which the term may be consistently applied, it may be well for us to consider some of the more important points in diagnosis and pathology before entering into the discussion of the case at hand, or making the attempt to classify it with the syndrome known as Banti's Disease. Stein has described Banti's disease as "a distinct morbid entity characterized by anemia of characteristic though variable type; cirrhosis of the liver, which is identical with the ordinary Laennec's interlobular fibrous cirrhosis, and is always secondary to splenomegaly; ascites and icterus; progressive hyposthenia which invariably leads to a fatal issue, and is accompanied by fatal hemorrhages from the nose, esophagus, stomach or bowels. A low fever is sometimes observed." So far as the blood picture is concerned, a leukopenia though often observed is not constant. The important blood picture being in the forms of the leukocytes; absolute or relative mononucliosis; absolute or relative leukopenia, absolute lymphatic leukopenia. Since the question of diagnosis hinges between primary cirrhosis and primary splenomegaly, it is not easy to differentiate, because the positive difference between splenomegaly and liver cirrhosis is not easily made, according to Zeigler. It is a fact that splenic enlargement follows conditions other than congestion in the splenic veins. The enlargement may occur with or before the

onset of cirrhosis, and occurs also in chronic hepatitis which runs its course without portal obstruction symptoms.

According to Banti the condition begins with enlargement of the spleen which is followed by anemia, and lastly terminates in liver cirrhosis. It is therefore not possible definitely to make a diognosis of Banti's disease in those forms of liver cirrhosis in which there is an enlarged spleen. The attempt to differentiate certain forms of splenomegaly from splenic anemia is also difficult to carry out, since an enlarged spleen occurring with anemia may be caused by other conditions, i. e. malaria, leukemia, pseudo-leukemia, tuberculosis, and hereditary syphilis. However, it may be seriously considered that in those cases where the Banti symptom complex is present splenectomy is a curative measure, in that anemia, liver swelling and icterus disappear.

Banti's exhaustive reports showed a primary change in the spleen first, an anemic stage lasting from three to five years, but which may also last ten years. The large, smooth splenic tumor is generally discovered accidentally. Not infrequently there are fever periods which last for irregular intervals. The leukocyte and detailed blood picture is unaltered. Then comes a transitional stage in which icterus and gastro-intestinal symptoms occur. The third, or ascitic stage with profound icterus, fever, lack of leukocytes and profound anemia lasts from one-half to one year, and terminates with intestinal or gastric hemorrhage.

The postmortem shows decided sclerosis of the spleen, destruction of the Malphighian bodies; induration of the pulp, portal sclerosis, atrophy of the liver, interlobular, and never very pronounced. The lymph glands remain unaffected. The disease occurs most frequently in young people without definite etiology, either for the condition, per se, or for liver cirrhosis. According to Banti, this anemia is due to a chronic toxemia, with the spleen as the primary cause. There is an endophlebitis of the splenic veins which occurs first and is frequently the only pathological lesion. In the early stages the liver affection is entirely absent, and it only becomes a factor through the constant passage of toxins through the portal veins. According to this idea, Banti recommended splenectomy for this condition and having performed this operation on a series of cases with good results, he found in his success an argument in favor of his theory. In the last few years there have been many arguments for and against Bantis theory. Icterus, ascites and hemorrhage are essentially symptoms of liver cirrhosis.

Through careful studies in metabolism, Umber has shown that in true Banti's disease a toxalbumen is present which immediately disappears with splenectomy. Umber's patient made a speedy recovery. In those cases where there is no toxalbumen, Umber holds that splenectomy is useless. Nageli in discussing this case of Umber's, because of its successful aspect doubts that it was a true Banti; since there was no splenic induration, but an increase in red blood corpuscles and some hyperplasia; the liver was small and not cirrhotic and endophlebitis was absent. It shows, however, that under certain circumstances where there is anemia and splenic tumor, splenectomy gives startling results.

Grutzner is of the opinion that the origin of the condition comes from a toxi-infectious irritant, and that according to the grade of the virulence or the individual reaction of the body varying clinical pictures are to be expected. Gibson also advocates the theory of the infectious nature of the condition and has reported a series of cases in which he claims to have demonstrated certain forms of streptothrix organisms in the spleen. Neuberg lays great stress upon the possibility of malaria as a cause for the Banti syndrome, since it is possible for it to cause splenomegaly, and following this, anemia, leukopenia, lymphopenia, liver cirrhosis with concomitant ascites, and even hemorrhagic diathesis. In the studies of Egyptian splenomegaly made by Day and Richards, their cases presented progressive hepatic cirrhosis, splenomegaly and anemia and in so far their cases resemble Banti's disease; but in their cases the fever and hepatic cirrhosis instead of being terminal features, were essential features of the disease from the start. It is noteworthy, however, that in the early stages of the disease, before the onset of ascites, splenectomy arrests the disease. The blood picture has also been as varying as the pathology. In the early stages, Banti has said that there is only diminution of the hemoglobin with a relative decrease of the red blood corpuscles, a normal or slight decrease of the leukocytes and a normal differential count. As the disease progresses there is an increased destruction of the red blood corpuscles with a leukopenia.

Umber has shown that the leukocytes increase considerably after splenectomy and that they gradually decrease to normal numbers. There is an increase of the mononuclears; the neutrophylic and lymphocytes being antagonistic there is an increase of one and a diminution of the other. About three months after splenectomy there is an increase in the eosinophiles; upon this fact Ehrlich lays a great deal of stress.

From the foregoing discussion it must be evident that there is a great difference of opinion with reference to those cases which may be reasonably classified as Banti's disease, and those which closely resemble it, but do not fulfill the necessary pathological and clinical findings. This being the fact, in how far does our case fit the syndrome, and if it does not fit, then what was the nature of the disease with which we were dealing?

We have here a young man of 26, who at the age of eight years gives a history of malaria, and whose mother when he was twelve years of age was told that he had an enlarged spleen. From this time up to the time of his consulting us, he had been in apparently good health, married and has one off-spring. His first sign of sickness was a swelling of the abdomen and icterus. The early blood examination showed only a lowered hemo-

globin, slight increase of leukocytes and a normal differential count. The malarial history and the questionable appearance of plasmodia in the blood, which when taken with the leukocytosis of 12,000 led us to believe that we were dealing with a chronic malarial condition. This determined us to use the therapeutic test, but since such a pronounced idiocyncrasy to quinine was discovered it had to be abandoned, and injections of sodium cacodylate were given daily without any result, as the condition grew progressively worse. The Wassermann being negative; the absence of a cough and any lung findings helped us to eliminate the question of tuberculosis, so the operation of splenectomy was decided upon. At the time of the operation the liver was seen to be small, the border being above the costal arch, while after the first paracentesis its lower border was palpable below the arch; it was a light yellowish brown color, its edge was smooth, its surface rough; the roughened places were elevated and discrete suggesting an interstitial shrinking with a bulging forward of the lobules. Both lobes seemed to be involved to the same extent.

The pathological report on the spleen is as follows: Examination of frozen sections. Weight, 963 grams. Measures 23 x 14 x 7 cm. On sectioning, the pulp has a bluish red appearance. It is quite firm.

Frozen sections: hemotoxylin-eosin stain. The sections show the tissue to have lost its typical appearance. The capsule is very much thickened and sends large fibrous bands into the splenic substance. The most marked condition is the almost complete absence of Malpighian bodies. Occasionally one is seen, but has the appearance of being in atrophic condition. The splenic vessels seem to be thickened. The sinuses are dilated and some seem to be filled with organized tissues. The endothelial cells do not appear to be swollen or hyperplastic. The fibrous tissue is quite diffuse, causing a diffuse fibrosis of the splenic substance.

Diagnosis: General fibrosis of the splenic substance and atrophy of the Malpighian bodies.

The subsequent blood picture following the splenectomy is similar to that described by Umber and Ehrlich in that immediately following the removal of the spleen there was a decided drop in the red blood corpuscles and a pronounced increase in the white blood corpuscles up to 36,400, with a differential count of 95% polymorphonuclear, 5% large. No eosinophiles; no lymphocytes. The change of the red blood corpuscles at this time, I would interpret as being regenerative rather than destructive, since before the operation there were no nucleated red cells. Just twelve days after the splenectomy the blood shows a decided improvement in the hemoglobin and number of red blood corpuscles, and a drop in the white count, but no change in the differential count.

One month after the second blood count the white blood corpuscles had greatly diminished, going down to 12,000; but very little change in the hemoglobin; decided increase of the red cells, and for the first time the appearance of lymphocytes and eosinophiles. One month and a half after the last examination the blood picture was practically normal. Hemoglobin 75%; white blood corpuscles 9,000; red blood corpuscles 3,610,000; differential count: slight increase in the large cells with a similar decrease in the lymphocytes and eosinophiles. To-day he presents an absolutely normal blood picture in every way.

The condition of the liver as seen at the operation fits the pathological description of liver cirrhosis independent of the splenomegaly, and while the pathology of the spleen is not that of the typical spleen of Banti's disease, it still has certain points in common with it, namely: the lack of increase of blood corpuscles in the spleen, the fibrosis, the absence and atrophy of the Malpighian bodies, the thickening of the splenic vessels, and the dilitation of the sinuses are also important changes.

We have here, then, the history of malaria as the causative factor, and the syndrome of anemia, splenomegaly, cirrhosis, ascites, icterus and hemorrhage, all of which have cleared upon the removal of the spleen. This practically coincides with the experience of those observers who have written upon this subject, but with this exception, that the majority of cases that have advanced to the terminal stage where the complete syndrome was present, terminated fatally from hemorrhage, even after splenectomy. In our case the daily bleeding from the nose began to be an alarming symptom. It was our impression that the administration of the horse serum as a means to control this complication played an important part in the ultimate recovery of the patient, and in the literature of reported cases at my command, I find no mention of its use in this connection. The theocin also was instrumental in effecting a balance for the elimination of the ascites, until such time that the collateral circulation brought about by the Thalma-Morrison operation could be established.

The urine under the influence of the theocin increased from 40 ounces daily average for thirty days to 80 ounces daily average for the same period of time.

We desire to express our thanks to Drs. Brem and Zeiler for their kindness in reporting on the Wassermann reaction and their exhaustive study of the pathology of the spleen.

DAILY URINARY TABLE.

Date.	Total Liquids.	Total Urine.
January 16 to 17		30 ozs.
January 17 to 18		35 ozs.
January 20 to 21		30 ozs.
January 21 to 22		20 ozs.
January 22 to 23		40 ozs.
January 23 to 24		40 ozs.
January 24 to 25		45 ozs.
January 26 to 27		40 ozs.
January 27 to 28		50 ozs.
January 28 to 29		30 ozs.
January 29 to 30		20 ozs.
January 30 to 31		35 ozs.
January 31 to		
February 1		20 ozs.
February 1 to 2		30 ozs.
February 2 to 3		30 ozs.
February 3 to 4		30 ozs.
February 4 to 5		50 ozs.

February	5 to 6			25 ozs.
February	6 to 7			44 ozs.
February	7 to 8			35 ozs.
February	8 to 9			40 ozs.
February	9 to 10			15 ozs.
February	12 to 13		21 ozs.	47 ozs.
February	13		72 ozs.	55 ozs.
February	14		38 ozs.	67 ozs.
February	15		34 ozs.	74 ozs.
February	16		61 ozs.	51 ozs.
February	17		42 ozs.	60 ozs.
February	18		45 ozs.	68 ozs.
February	19		55 ozs.	53 ozs.
February	20		74 ozs.	49 ozs.
February	21		70 ozs	36 ozs.
February	22		47 ozs.	50 ozs.
February	23		63 ozs.	64 ozs.
February	24		61 ozs.	57 ozs.
February	25		57 ozs.	54 ozs.
February	28		50 ozs.	49 ozs.
March	11....Theocin was started			40 ozs.
March	12 to 13			106 ozs.
March	13 to 14			56 ozs.
March	14 to 15			60 ozs.
March	15 to 16			56 ozs.
March	16 to 17			50 ozs.
March	17 to 18			103 ozs.
March	18 to 19			73 ozs.
March	19 to 20			55 ozs.
March	20 to 21			82 ozs.
March	21 to 22			66 ozs.
March	22 to 23			54 ozs.
March	23 to 24			66 ozs.
March	25 to 26			57 ozs.
March	26 to 27			73 ozs.
March	27 to 28			63 ozs.
March	28 to 29			54 ozs.
March	29 to 30			77 ozs.
March	30 to 31			65 ozs.
April	1 to 2			102 ozs.
April	2 to 3			126 ozs.
April	3 to 4			86 ozs.
April	4 to 5			97 ozs.
April	5 to 6			107 ozs.
April	6 to 7			78 ozs.
April	7 to 8			112 ozs.
April	8 to 9			128 ozs.
April	10 to 11			125¼ oz
April	11 to 12			96 ozs.
April	12 to 13			110 ozs.
April	13 to 14			136 ozs.
Daily average for thirty days before Theocin was started				40 3/10
Daily average for thirty days after Theocin was started				80 8/10

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LANE MEDICAL LECTURES, 1915.

To be delivered by Dr. Frank Billings, Professor of Medicine in Rush Medical College, Chicago.

Sept. 20, 1915—Lecture I—*A General Consideration of Focal Infection.* Etiology; Location and Character; Bacteriology; Mode of Dissemination of Infection and Toxins from Focus.

Sept. 21, 1915—Lecture II—*Bacteriology Continued.* The Streptococcus-Pneumococcus Group and the Transmutability thereof. Pathological Specificity and Tissue Affinity and where acquired. Morbid Anatomy and Its Variations in Reference to Infected Tissues and Organs. Lantern Slide Illustrations.

Sept. 22, 1915—Lecture III—*Acute Diseases Directly Related to Focal Infection.* Rheumatic Fever; Myositis; Endocarditis; Periocarditis; Myocarditis; Chorea; Malignant Endocarditis; Nephritis; Appendicitis; Cholecystitis; Peptic Ulcer; Pancreatitis; Septico-Pyemia; Lymphadenitis; Erythema Nodosum; Herpes Zoster; Miliary Tuberculosis, etc.

Sept. 23, 1915—Lecture IV—*Chronic Diseases Directly Related to Focal Infection.* Arthritis Deformans; Arthritis Gonorrhoica; Myositis; Neuritis; Nephritis; Cholecystitis Calculosa; Arthritis Tuberculosa; Myocarditis and other Chronic Conditions Supervening upon Acute Processes.

Sept. 24, 1915—Lecture V—*Treatment.* A. Focal Infections. B. Resulting Systemic Diseases Acute and Chronic. A Consideration of the Use of Vaccines and Serum.

During his stay Doctor Billings has consented to give some clinical lectures and demonstrations. The exact time and place of these will be announced later.

BOOK REVIEWS

Essentials of Medical Electricity for Medical Students and Nurses. By George K. Abbott, M.D., Professor of Clinical Medicine, College of Medical Evangelists, Loma Linda, Cal. 12mo of 132 pages with 87 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.25.

A short book which attempts to cover too much ground. In doing this it neither satisfies the more elementary mind nor the practitioner who might seek help from it. C. W. L.

Medical Electricity and Rontgen Rays and Radium. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Second edition, thoroughly revised and enlarged. Octavo of 1219 pages, with 798 practical illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $7.50 net; half morocco, $9.00 net.

A tremendous amount of material is necessarily included in the volume, which covers the whole field of electricity, as applied in medicine, X-rays and radium.

Much of it is old and obsolete, and the newer material which has been added in the last edition is buried in much that has fallen into disuse, so that it is of more interest as a record of progress than as a live reference book.

The chapters on the X-ray are particularly dis-

appointing in this respect. The book has a limited field in general medical libraries and the private shelves of experts in the work, but for the general practitioner it will prove more confusing than helpful. H. E. R.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases in Northwestern University Medical School, Chicago; and Frederick Peterson, M.D., formerly Professor of Psychiatry, Columbia University. Eighth edition, revised. Octavo volume of 940 pages, with 350 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.00 net; Half Morocco, $6.50 net.

This eighth edition is an enlargement upon the previous editions, bringing up to date the newer methods of treatment and the more recent knowledge, especially in regard to syphilis of the nervous system.

It is an ideal book for every practitioner of medicine, because it takes up in detail from an analytical standpoint, not only the methods of taking the history and making the physical examination, but it dwells at great length upon the meaning of all the possible physical signs that can be obtained.

The book is replete with fine intelligent photographs and schemes for making differential diagnosis. The section dwelling on the mental conditions is essentially the same as in the previous editions, only amplified. Any detail amplification of its contents would be ambiguous. For teaching purposes, the book is ideal. J. M. W.

The Treatment of Fractures. With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M.D., Surgeon to the Massachusetts General Hospital; Associate in Surgery at the Harvard Medical School. Eighth Edition, Revised and Enlarged. Octavo volume of 734 pages, with 1057 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Polished Buckram, $6.00 net; Half Morocco, $7.50 net.

The frequent editions of this book, since its first publication in 1900, attest its popularity. The popularity is well deserved. The book is concise, clear and lucid. The author is successful in making his meaning known, and has chosen his illustrations well to elucidate his text. The result is a work which is eminently practical, and furnishes the reader with a reliable guide in settling the many points of technique in the treatment of fractures. It tells not only what to do, but how to do it. The author favors the employment of the autogenous bone graft in cases of delayed union, and of non-union, and maintains that definite indications must be present to justify open treatment, as a routine method in fractures in general. The abduction treatment of fractures of the femoral neck is preferred. The shoulder cap, in fractures of the humerus still finds favor. Both plaster of paris and wooden splints are employed, and ready-made splints are justly condemned. The employment of the term "upper arm" is unfortunate. Early massage after fracture is recommended. The statement that simple fracture of the carpal bones is unusual will not meet with general acceptance. The book contains an excellent index and a rather brief bibliography. It is well made up, and typographical errors are conspicuous by their absence. ELY.

Manual of Obstetrics. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. 12 mo. of 463 pages, 171 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $2.25 net.

This little book is what the name implies—a manual. The divisions are logical: Anatomy and Physiology, Pregnancy, Labor, the Normal Puerperium, Obstetric Operations and the Foetus. There are sub-divisions of each of the above. Chapters are given on Obstetric Asepsis and Antisepsis and the Medico-Legal Aspects of Obstetric Practice, the latter giving some timely advice to the young practitioner in handling such cases as criminal abortion, infanticide and still-births.

The treatment of hemorrhage is discussed in much detail and the recommended measures meet with approval with one exception, viz.: the use of ergot in placenta praevia before delivery. The ill-advised use of ergot has made for the obstetrician some of the most dangerous complications and it seems wise to withhold ergot medication till the uterus is empty.

In like manner, we can not approve of the insertion of the finger into the child's mouth as an aid in the extraction of the after-coming head. Too often undue traction is made and results in dislocation or fracture of the lower jaw and makes necessary for the obstetrician a rather embarrassing explanation to the family.

In the puerperium, we have rarely found it necessary to catheterize the patient although the author states that one or two catheterizations are usually necessary before spontaneous voiding occurs.

On the whole, however, the book contains much valuable information and sound advice and with the exceptions noted above can be recommended. H. A. S.

Pyelography (pyelo-Ureterography) A Study of the Normal and Pathologic Anatomy of the Renal Pelvis and Ureter. By William F. Braasch, M.D., Mayo Clinic, Rochester, Minn. Octavo volume of 323 pages, containing 296 pyelograms. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $5.00 net.

This monograph, the first in the literature on the subject, deserves careful reading by all physicians, specialists or otherwise, interested in the diagnosis of renal conditions. The author has been for many years a strong advocate of the value of pyelography, and, having a wealth of material at his disposal, his experience is unusually large and valuable. The interpretation of the various types of pelvic deformities, largely checked up by operative findings, is original and, in most cases, convincing. There is a tendency to overestimate the significance of minor changes. To one with the experience of the author only will it be possible to differentiate pyelitis, pyelonephritis and renal tuberculosis by pyelography. The difficulties of such interpretation, however, are clearly indicated in the text.

There are ten chapters. The history of pyelography is first thoroughly and accurately given. The chapter on "technic" includes a brief discussion of the selection of cases in which the indications and contraindications given are too few and too general. No emphasis is made of the fact that pyelography is a special rather than a routine method of renal diagnosis. The descriptions and illustrations of the normal types of pyelographic pelves, and the details regarding major and minor calyces, are excellent and invaluable. Abnormal positions, as shown by pyelography, are well discussed. The chapters on mechanical and inflammatory dilatations contain much that is original. There is a commendable freedom from a didactic arrangement in the statement of these ideas some of which could easily have been so arranged; for example: Predominant distension of the pelvis indicates obstruction in the lower ureter, of calyces, in the upper ureter. Irregular outline of

calyces suggests inflammatory changes. A pyriform pelvis indicates anomalous blood vessel hydronephrosis. A normal pelvis with dilatation of the calyces and upper ureter, or dilatation of the pelvis alone without changes in the calyces or upper ureter, indicates pyelitis, etc.

Chapters on renal and ureteral stone, conditions in which pyelography is of most practical value, are full of valuable suggestions. The value of the method in diagnosing and differentiating renal tumors is next outlined, and the monograph closes with an interesting compilation of congenital anomalies.

Careful study of this monograph will give a familiarity with the significance of dilatations, contractions, retractions and irregularities of the pelvic and ureteral outline necessary for the proper interpretation of the pyelogram. F. H.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M.D., F.R.S., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore; in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and Thomas McCrae, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1,000 pages each. Volume V. Diseases of the Nervous System; Diseases of the Locomotor System. Just ready. Price per volume, cloth, $5.00 net; half morocco, $7.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

The following is a list of the authors and their subjects:

Chapter I. Introduction to Diseases of the Nervous System. By Lewellys F. Barker, M.D.

Chapter II. Diseases of the Motor Tracts. By William G. Spiller, M.D.

Chapter III. The Combined System Diseases of the Spinal Cord. By Colin K. Russel, M.D.

Chapter IV. Sclerosis of the Brain. By Edwin Bramwell, M.B., F.R.C.P. (Edin. and Lond.).

Chapter V. Diseases of the Meninges. By Edwin Bramwell, M.B., F.R.C.P. (Edin. and Lond.).

Chapter VI. Diffuse and Focal Diseases of the Spinal Cord. By E. Farquhar Buzzard, M.D., F.R.C. P. (Lond.).

Chapter VII. Topical Diagnosis of Disease of the Brain. By Joseph Collins, M.D.

Chapter VIII. Aphasia. By Joseph Collins, M.D.

Chapter IX. Tumors of the Brain and Meninges. By Harvey Cushing, M.D.

Chapter X. Hydrocephalus. By Harvey Cushing, M.D.

Chapter XI. Acute Encephalitis and Brain Abscess. By E. E. Southard, M.D.

Chapter XII. Diseases of the Cerebral Bloodvessels. By Henry M. Thomas, A.M., M.D.

Chapter XIII. Diseases of the Cerebral Nerves. By E. W. Taylor, M.D.

Chapter XIV. Diseases of the Peripheral Nerves. By Gordon M. Holmes, M.D., M.R.C.P.

Chapter XV. Epilepsy. By L. Pierce Clark, M.D.

Chapter XVI. Neurasthenia. The Traumatic Neuroses and Psychoses. By Charles W. Burr, M.D.

Chapter XVII. Hysteria. By Smith Ely Jelliffe, A.M., M.D.

Chapter XVIII. Migraines, Neuralgia, Professional Spasms, Occupational Neuroses, Tetany. By Smith Ely Jelliffe, A.M., M.D.

Chapter XIX. Paralysis Agitans, Chorea, Choreiform Affections, Infantile Convulsions. By Daniel J. McCarthy, M.D.

Chapter XX. Myasthenia Gravis, Paramyoclonus Multiplex, Periodic Paralysis. By Daniel J. McCarthy, M.D.

Chapter XXI. Astasia-Abasia, Adiposis Dolorosa. By Daniel J. McCarthy, M.D.

Chapter XXII. Syphilitic Diseases of the Central Nervous System. By Bernard Sachs, M.D.

Chapter XXIII. Amaurotic Family Idiocy (Tay-Sachs Disease). By Bernard Sachs, M.D.

It may be seen from a reference to the above list of contributors that it contains the names of many distinguished neurologists. Viewed as a whole the work is comprehensive, concise and an absence of overlapping of the subjects is noted, which is often difficult to avoid when a treatise is made up of a series of monographs. Especial mention may be made of disturbances of more complex psychic processes by Barker in Introduction to Diseases of the Nervous System, Diseases of the Motor Tracts by Spiller, Diseases of the Meninges by Edwin Bramwell, also Focal Diseases of the Spinal Cord by the same author; the articles of Collins on Topical Diagnosis of Diseases of the Brain, and on Aphasia in which Marie's theory is set forth and discussed. Cushing has an excellent article on Tumors of the Brain and Meninges, and the subject of Hysteria is admirably presented by Jelliffe, who discusses the historical and theoretical aspects of this affection, including the Freudian Hypothesis. This book can be highly recommended to Internists and those in general practice of medicine, as well as to neurologists.

W. F. S.

Diarrheal, Inflammatory, Obstetric, and Parasitic Diseases of the Gastro-Intestinal Tract. By Samuel G. Gant, M. D., LL. D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum, and Anus at the New York Post-Graduate Medical School and Hospital. Octavo of 604 pages, 181 illustrations. Philadelphia and London. W. B. Saunders Company, 1915. Cloth, $6.00 net; half morocco $7.50 net.

Dr. Gant has done a signal service for the medical profession in bringing together the many causes of diarrhea in one book and in illumining the subject by his large experience. There are many good chapters on intestinal tuberculosis, amebiasis and the operative treatment of severe colitis.

While fully appreciating the service the author has performed in producing for us so useful a book, we cannot help noticing certain defects which unfortunately are common to most of the text-books on diseases of the digestive tract.

First—in the effort to make the work encyclopediac and to enable the salesman to show the doctor that every conceivable and up-to-date detail is included, the books become padded with much that is useless, impracticable and often long since discarded.

Every disease that has ever been named must have its separate description, with symptomatology, differential diagnosis and treatment outlined, even when three or four such diseases can hardly be distinguished one from another at autopsy; and if they could be distinguished during life, the treatment would remain the same for all of them. The bewildered physician, reading up on a case, will find a symptom complex that seems to fit. Turning over the page he finds another disease described in practically the same words, and a little further on there is still another. If he does succeed, in this way, in naming his patient's trouble, is he any better off? It seems to us that a rational diagnosis should be based upon some understanding of the disturbed physiology. The food is going through the tract too fast: is this true for the whole intestine or is there slowing in some parts and hurrying in others; is the irritant to be found in the intestinal contents or is it a

lesion of the wall of the gut? If so, where is it and must it be removed surgically? These are some of the problems that arise and it is to be hoped that in subsequent editions some of the space now given to classification will be devoted to "pathologic physiology" and diagnosis.

The interne in a good teaching hospital will often make as clever diagnoses as does his chief of staff because he knows how to work up a case. It would seem that a book which is written to help men, most of whom have not had such training, should do more than enumerate the methods available for diagnosis; it should explain very carefully those actually employed and found useful by the author. We should get a clear idea of the way in which he studies the average case that comes to him.

Considering that, next to the history, the X-ray is often the most important factor in an accurate diagnosis of conditions in the digestive tract, the space allotted to it in the book seems too small. Although it is true, as Dr. Gant says, that it is expensive and should be handled by one who knows something about it, it is true also and should be emphasized, that the man who does not know how to use it is criminally negligent if he fails to send his patient with an operable carcinoma of the colon to the man who can use it and who can easily make the diagnosis for him.

We can hardly agree that "bismuth in one form or another has proved the least dangerous and expensive, the most effective, and is generally employed by expert roentgenologists" (p. 52). Barium sulfate at 75 cents a pound has almost replaced bismuth oxychloride at $3.75. Carelessness in writing this section is seen also in this sentence (p. 53): "The novice should early learn to analyze the lights and shadows and to closely distinguish clear spots, which indicate accumulations of air or gas, from darker areas, which show that the viscera has been bismuthized at such points." If, as it appears from the context, the author is referring to plates, he too had better learn that the clear spots are due to the bismuth.

Textbook writers must hurry over many sections to get at the ones that interest them, the ones that they can write with authority. We wish they would have certain marks to distinguish statements to which they have given thought and which epitomize the literature on the subject from those which are written hurriedly to make the book complete. For instance, would the author want to defend this statement at the Congress of Physical Chemists (p. 171): "The osmotic pressure is controlled in women by the menstrual loss of blood"? We offer as a suggestion that authors add some such sign as L. U. L. for I looked up literature; D. S. R. for I did some research, and P. S. H. for publisher says hurry. On page 172 we read that in gout we can demonstrate the compensatory action of the intestine by the decrease of urine secreted and the dark stool of nuclein substances. Possibly the author is thinking of nuclei stained properly with hematoxylon. P. 191, If "one of the chief characteristics of enteritis is the rumbling heard and felt by palpation in the intestinal coils of the right iliac fossa" then most of us have it. On page 195 we learn that "cecal gurgling is indicative of catarrh at or about Bauhin's valve."

On page 282 we are surprised to find that Koch's tuberculins, etc., are sera. On p. 464 is a sample of an inconsistency that is shared by so many surgeons today. While he says a large proportion of cases of mucous colitis are due to adhesions about the colon, he "cures" other cases by stitching the colon here and there. Case says constipation is often due to adhesions that prevent the sigmoid from descending properly during defecation and Kellogg operates to loosen them; Gant says the colon often descends too far and he stitches it up to cure constipation. The same surgeon that carefully clears off a Jackson's veil and mobilizes the cecum will stitch the next colon to the anterior abdominal wall because it is too movable.

In spite of the many loose statements throughout the book, there is so much that is valuable that we can certainly recommend the volume for a place in the physician's working library.

W. C. A.

SOCIETY REPORTS

CALIFORNIA PEDIATRIC SOCIETY NORTHERN BRANCH.

The Fourth meeting of the California Pediatric Society—Northern Branch—will be held on Thursday evening, September 30, at 8:15, in the County Medical Library. The program will be as follows:

I. Treatment of Paralysis following Acute Anterior Poliomyelitis—Demonstration of Cases.
Walter F. Schaller.

II. Creolin in Scabies in the Infant.
Douglass W. Montgomery.

III. Study of the Problem of Dental Hygiene in Children.
Guy S. Millberry.

It is hoped that anyone interested in child welfare problems will come to this meeting and join the Society. We will welcome all who are really interested in any phase of child welfare work.

WILLIAM PALMER LUCAS,
Secretary.

PLACER COUNTY.

The July meeting of the Placer County Medical Society was held on the evening of July 17, 1915, at the W. C. Jones Memorial Hospital, Grass Valley. Owing to the unavoidable absence of the President and Vice-President, Dr. J. T. Jones of Grass Valley presided.

There were present the following members and visitors: Drs. Tickell, Bush, Allen, Sawyer, J. T. Jones, C. P. Jones, Peers, George E. Ebright, F. F. Gundrum, S. L. Haas, Donald H. Currie, C. A. Durant, H. K. Berkley, O. C. Hyde.

Drs. O. C. Hyde, Lincoln, and A. N. Couture, Auburn, were elected members of the Society.

Cases of interest were reported by Drs. Tickell, Sawyer and Berkley.

The program of the evening consisted of an address by Dr. F. F. Gundrum, Sacramento, on "Cardio-Vascular Lesions of Syphilis," and an address by Dr. George E. Ebright, University of California Medical School, on "Diagnosis and Treatment of Certain Types of Myocarditis." Dr. Gundrum's paper was discussed by Drs. Tickell, Allen, Ebright, Sawyer, Haas, Gundrum. Dr. Ebright's paper was discussed by Drs. Tickell, Gundrum, Allen, Ebright.

After adjournment refreshments were served on the lawn adjoining the Jones residence.

The next meeting will be in Colfax during August.

ROBERT A. PEERS, Secretary.

PEDIATRIC SOCIETY; SOUTHERN BRANCH.

On the evening of July 23, at a meeting held at the Barlow Medical Library, Los Angeles, the Pediatric Society of Southern California was organized. The officers elected were as follows: President, W. A. Edwards, M. D.; Vice-President, P. V. K. Johnson, M. D.; Secretary and Treasurer, Victor Stork, M. D.; Councillors, Henry Dietrich, M. D., and R. B. Mixsell, M. D.

The Society has for its object the advancement of the study of infancy and childhood and to this end will include as associate members those interested in the various phases of child study.

It is planned to hold meetings from time to time,

when papers will be read by men of authority in the field of Pediatrics.

An effort is being made to show the Government Child Welfare Exhibit in Los Angeles under the auspices of the Society.

SACRAMENTO COUNTY.

Regular July meeting of the Sacramento Society for Medical Improvement was called to order by Dr. T. J. Cox.

Report of cases:—Dr. McKinnon of Rio Vista reported that since Rio Vista has been using well water there has been no case of typhoid fever developed in the town.

Dr. Hanna reported a paper—"Treatment of Wounds Acquired in War."

First paper of the evening was read: "Surgical Treatment of the New Growths of the Face," by G. A. White, M.D.

Second paper: "Escharotic Treatment," by Fred'k. Grazer, M.D.

Third paper: "X-ray Treatment," by G. A. Foster, M.D. Discussed by Drs. Barnard, Jones, Cox and Gundrum.

Dr. Blake Franklin was elected to membership. Adjourned 10:30 p. m.

F. F. GUNDRUM, M.D.,
Secretary-Treasurer.

SOUTHERN CALIFORNIA MEDICAL SOCIETY.

Fifty-Second Regular Semi-Annual Meeting.

Officers: F. W. Thomas, M.D., Claremont, President; W. T. McArthur, M.D., Los Angeles, First Vice-President; J. K. Swindt, M.D., Pomona, Second Vice-President; Walter Brem, M.D., Los Angeles, Secretary and Treasurer.

Committee on Arrangements: R. E. Austin, San Diego, Chairman.

Treatment Based on Etiology the Ideal Method. Dr. William D. Whitten, San Diego.

Some Etiologic Factors in Purpura Hemorrhagica. Dr. W. W. Duke, Kansas City, Mo.

Disturbances of Purin Metabolism as Related to Insomnia. Dr. Charles L. Bennett, Los Angeles.

Alcoholic Injections for Trifacial Neuralgia with Demonstration of the Harris Method. Dr. Ross Moore, Los Angeles.

2:00 p. m. Heliotherapy in Bone Tuberculosis. Dr. Maynard C. Harding, San Diego.

Relationship Between the Primary Infection in the Child and Clinical Tuberculosis in the Adult. Dr. Francis M. Pottenger, Los Angeles. Discussion to be opened by Dr. Joseph A. Parks, San Diego.

Observations on Bone Transplantations (illustrated with lantern slides), Dr. Ellis W. Jones, Los Angeles. Discussion to be opened by Dr. M. C. Harding, San Diego.

The X-Ray as an Aid in the Study of Intrathoracic Disease, Especially Tuberculosis. Dr. Ray W. Matson, Portland, Ore. Discussion to be opened by Dr. Albert Soiland, Los Angeles.

Thursday Evening—Entertainment by the Medical Profession of San Diego. Refreshments at the Christobal Cafe. Seeing the Exposition by night.

Friday, July 9, 1915, 10:00 a. m. Pathology and Treatment of the Toxemias of Pregnancy. Dr. Frank C. Ainley, Los Angeles.

Here and There in Medicine and Surgery. Dr. George E. Abbott, Pasadena.

The Slowly Elaborating Stomach. Dr. Robert Pollock, San Diego. Discussion to be opened by Dr. Donald J. Frick, Los Angeles.

Recent Advances in the Diagnosis and Treatment of Diphtheria. Dr. William P. Lucas, San Francisco.

Cancer of the Uterus Treated by the Low Heat or Percy Method. Dr. Thomas O. Burger, San Diego.

Friday afternoon devoted to the Exposition or to sight-seeing. No scientific program.

8 p. m.—Address by Dr. William L. Rodman, President of the American Medical Association.

Pathology of Osteomyelitis—Animal Experimentation. Dr. Frank S. Dolley, San Francisco.

Clinical Notes on Perinephritic Abscess. Dr. W. F. Braasch, Rochester, Minn. Discussion to be opened by Dr. A. B. Cecil, Los Angeles.

Spinal Anesthesia in Anal and Rectal Surgery. Dr. W. H. Kiger, Los Angeles.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Caustic Applicators, Special (Silver Nitrate, 50 per cent.).—Wooden sticks, 12 in. long, tipped with a mixture of silver nitrate 50 per cent. and potassium nitrate 50 per cent. Antiseptic Supply Co., New York (Jour. A. M. A., July 3, 1915, p. 29).

Enzymol.—An extract of the fresh animal stomach containing the gastric enzyme in active standardized form and having an acidity due to combined hydrochloric acid. Enzymol is stated to be useful as an application to old sores, ulcers and slow healing wounds. It is said to correct offensive odors, to exert a solvent action on pus, sloughing and necrotic tissue and to impart a healing stimulus. For the solution of necrotic bone and in some abscesses hydrochloric acid is added to the diluted extract. Fairchild Bros. & Foster, New York (Jour. A. M. A., July 24, 1915, p. 333).

Items of Interest.

Liquid Petrolatum.—Liquid petrolatum is sold under proprietary names such as Bakural, Intcrol, Med-O-Lin, Muthol, Semprolin, Whiteruss, Nujol and Stanolax. Nujol is put up by the Standard Oil Co. of New Jersey, and Stanolax by the Standard Oil Co. of Indiana. Probably before long each of the other Standard Oil companies will have its own name for liquid petrolatum—that is, if physicians will tolerate. There is no excuse whatever for special brands of liquid petrolatum, so far as the medical profession and the public are concerned. But it is otherwise with those who supply the product. More can be charged for a product sold under a trade-marked name and claims can be made which could not be made when the product is sold under its proper title, liquid petrolatum (Jour. A. M. A., July 10, 1915, p. 175).

Horowitz-Beebe Cancer Treatment.—Newspapers are giving much attention to a new "serum"—Autolysin—for the treatment of inoperable cancer. This had its origin in the publication by S. P. Beebe, formerly Professor of Experimental Therapeutics at Cornell Medical School, of a system of treatment by "Alexander Horowitz, Ph. D., an Austrian biologist and chemist," and its trial at the General Memorial Hospital. The composition of the preparation is not disclosed as to quantities, but it is said to be made from: Menyanthes trifoliata, Melilotus officinalis, Mentha crispa, Brussica alba, Anemone hepatica, Viola tricolor, anthemis, fructus coloeynthidis, lignum quassiae, Urtica dioica, radix rhei and hedge hyssop. One critic of the matter has remarked that apparently the only ingredient which has been overlooked in the preparation of the new remedy was a rabbit's foot (Jour. A. M. A., July 24, 1915, p. 336).

Echinacea.—This is one of the drugs which the

Council on Pharmacy and Chemistry has found valueless. Confirming this, the chemists of a pharmaceutical house report that they were unable to detect the presence of any physiologically active substance in the drug (Jour. A. M. A., July 24, 1915, p. 342).

Gray's Glycerine Tonic.—The Council on Pharmacy and Chemistry reports that Gray's Glycerine Tonic Comp. (Purdue Frederick Company, N. Y.) is not eligible for admission to New and Nonofficial Remedies because its composition is secret; because grossly unwarranted therapeutic claims are made for it; because the name of this pharmaceutical mixture does not indicate its chief constituent, gentian, and because its use is unscientific and a detriment to rational medicine. From the statements made in regard to its composition it appears that besides the alcohol, gentian is the only active drug present. Nevertheless the "tonic" is said to be good for no less than thirty-two diseases, ranging from amenorrhea to whooping cough (Jour. A. M. A., July 10, 1915, p. 189).

Tongaline and Ponca Compound.—The Council on Pharmacy and Chemistry reports that Tongaline, Tongaline Tablets, Tongaline and Lithia Tablets, Tongaline and Quinine Tablets and Ponca Compound Tablets, products of the Mellier Drug Company, St. Louis, are ineligible for New and Nonofficial Remedies because their composition is indefinite and semi-secret; because grossly exaggerated therapeutic claims are made for them; because their names are misleading, and because their composition is unscientific and irrational. Tongaline is essentially a sodium salicylate mixture. Its name is derived from one of the asserted constituents, "tonga," an inert, long discarded mixture of barks and herbs said to be gathered and prepared by Fiji Islanders. In addition Tongaline is stated to contain blue cohosh, colchicum and pilocarpin. The amounts of the ingredients are not now declared. Neither is the composition of the Tongaline and Quinine and Tongaline and Lithia Tablets made known. Ponca Compound is a "female weakness" remedy in tablet form. The name suggests that "Ponca" is a medicinal substance and at one time "Ext. Ponca" was named as an ingredient. Now the tablets are said to contain extract of mitchella repens, senecin, helonin, caulophyllin and viburnin. Not only are no quantities given, but the character of senecin, helonin, caulophyllin and viburnin is not made known (Jour. A. M. A., July 17, 1915, p. 269).

M. I. S. T. No. 2.—M. I. S. T. (Murray's Infallible System Tonic) No. 2 is sold as a cure for cancer, locomotor ataxia, paralysis, diabetes, suppressed and profuse menstruation and a host of other conditions. Analysis in the A. M. A. Chemical Laboratory demonstrated that M. I. S. T. No. 2 consists of capsules which contain aloes and blue mass as their essential constituents (Jour. A. M. A., July 31, 1915, p. 446).

Caldwell's Syrup Pepsen.—Some of the claims made for this "patent medicine" are "Positive Relief for Constipation," "Dispels Colds, Headache, Fevers and all ills caused from Bad Digestion, Foul Stomach, Torpid Liver and Sluggish Bowels." While the name and the claims suggest the presence of pepsin, L. F. Kebler, the Government chemist, reported that this nostrum is an aqueous alcoholic solution containing laxatives flavored with oil of peppermint and devoid of any appreciable amounts of pepsin. Regarding the laxative constituents, the A. M. A. Chemical Laboratory reports that a senna preparation is the essential laxative constituent (Jour. A. M. A., July 31, 1915, p. 447).

O'Neil's Malt Whiskey; Mountain Valley Spring Water; Stafford Mineral Springs Water; Sa-Yo Mint Jujubes; Houchens' "Family Physician"; Dr. Martel's Female Pills; Quickstep, Frye's Remedy; Gray's Glycerin Tonic.—A "Notice of Judgment" has been issued by the Federal authorities regarding each of the proprietary preparations named. Each was found to be misbranded under the Shurley amendment to the Federal Food and Drugs Act, which declares it illegal to make false and unwarranted therapeutic claims for medicines (Jour. A. M. A., July 24, 1915, p. 350).

PANAMA-PACIFIC DENTAL CONGRESS.

Aug. 6, 1915.

Dr. P. M. Jones,
Sec't'y. State Medical Society,
San Francisco, Cal.

Dear Doctor:

The Committee of Organization of the Panama-Pacific Dental Congress cordially invites the Officers and Members of your Society to attend the sessions of the Congress to be held in the Civic Auditorium, San Francisco, Cal., August 30th to September 9th, inclusive.

Special features of the program will be announced daily in the public press.

Admission card may be obtained by applying to the Secretary, or at the Registration Booth in the Auditorium during the Congress.

Respectfully yours,

PANAMA-PACIFIC DENTAL CONGRESS
COMMITTEE OF ORGANIZATION.
Frank L. Platt, Chairman.
A. M. Flood, Secretary.

EXAMINATION OF SCHOOL CHILDREN.

Sanford, Fla., June 23, 1915.

Dr. Phillip Mills Jones, Editor,
California State Journal of Medicine,
San Francisco, Cal.

Dear Doctor:

For your information, I beg to advise that the Florida Legislature has just passed an Act, which provides for thorough examination of all school children of the State, including the rural schools, under the direction of the State Board of Health. This bill also provides for a sanitary survey of all school buildings and their surroundings.

This bill was drawn up by myself, was introduced in the House of Representatives by Hon. Forest Lake, Sanford, and handled in the Senate by Senator Arthur E. Donegan, Kissimmee. Its passage is due in a large measure to our efforts. I wrote over three thousand letters throughout the state, besides having personal interviews with prominent educators, in hopes of furthering this cause. I would be glad if you would publish this fact in the next issue of your journal, sending me a copy.

Very fraternally yours,

ELMER J. MILLER, M.D.

SAN FRANCISCO SESSION.

"The reports of the proceedings of the Annual Session of the Association, held at San Francisco, which appeared in The Journal last week, are gratifying evidence of the work being done by the organization. The attendance was fully as large as the most optimistic expected. The number who registered from the Pacific Coast States proved the interest of the profession in that territory. The minutes of the House of Delegates show the efforts of the Association in advancing the usefulness of the profession in serving the public. The exhaustive study of the relations which physicians must meet in the sociologic conditions which prevail, especially in the development of workmen's compensation legislation, as they are presented in that portion of the report of the Judicial Council

devoted to this subject, merits special attention. The action of the House in directing that this subject be brought to the notice of the different branches of the organization shows the policy of the Association: that the medical profession shall seek to advance the betterment of conditions under which the people live and labor. This is but one evidence of the earnest thought which is being given to the problems which come before the House of Delegates. The number of important measures which were considered and wisely determined can be appreciated only by a careful reading of the records. The work of the Scientific Assembly—the sections—was good. The programs were excellent, most of the meetings were fairly well attended, and interest was manifested in the papers presented and discussed. The Scientific Exhibit, as always, commanded the interest of the Fellows; not only the excellence of the work displayed but also its practical value to the profession and the clear demonstrations made by those who contributed were frequently commended. The Commercial Exhibit was most creditable and fully deserved the interest manifested by those who visited the booths of the exhibitors. The social events were well planned and carried out. Especially were the excursions enjoyed by those who were able to take advantage of them. The success of Commemoration Day has already been noted. The exposition did not detract from the interest in the work of the Association as might have been expected, but was always available whenever leisure time permitted the Fellows or their ladies to visit it. The members of the local profession exerted themselves with true California hospitality to provide for the comfort and pleasure of the visitors and are to be congratulated on their conduct of the convention. The San Francisco Session was a great success."—Journal A. M. A.

VACATIONS BRING TYPHOID.

State Board of Health Issues Warning to Campers.

According to the records of the State Board of Health, most cases of typhoid fever appearing in the large cities during the summer and early autumn are contracted in the country by persons returning from their summer vacations. Fully half of the cases of typhoid fever occurring in San Francisco have been contracted in the country. Insanitary summer resorts and careless campers are largely to blame for the conditions leading to so many cases of typhoid fever. For this reason, the State Board of Health is sending its inspectors out while the season is early, for the purpose of informing the proprietors of summer resorts concerning the State law covering sanitation, to learn the condition of toilets and water supplies and to give all possible information for the prevention of typhoid fever.

Many insanitary health resorts remain undiscovered sources of infection and vacationists cannot observe too great care in the selection of places where they are to spend their vacations. Convalescents from typhoid fever often seek the mountains in order to recuperate. Since many typhoid convalescents become carriers, discharging the infection with the wastes of the body, for weeks, months or years afterward, it can readily be seen that such a carrier may be a source of great danger at a summer resort.

By the middle of July the vacation rush is in full swing. The annual exodus from city to country reaches its maximum at that time. In fact, city physicians are beginning to report cases of typhoid fever in returning vacationists already. As soon as vacations end, typhoid fever begins.

The State Board of Health's records show that August, September and October are the months in which most typhoid cases are reported. The mortality is correspondingly higher during these months, also. It is encouraging, however, to note that there were fewer deaths from typhoid fever during 1914 than for many years previous. It was during 1914 that the State Board of Health started its sanitary inspections and while it cannot be said that the reduced death rate is due to this work, it has no doubt played an important part. The State Board of Health is endeavoring to lower the typhoid rate to a still greater degree and hopes to make 1915 a record year.

"ARTICLES OF FAITH" CONCERNING CANCER.*

A Platform Upon Which to Unite in the Campaign of Education.

(1) That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formed concerning them, and that, in the light of our present knowledge, they hold no special element of alarm.

(2) That the contagiousness or infectiousness of cancer is far from proved, the evidence to support this theory being so incomplete and inconclusive that the public need have no concern regarding it.

(3) That the communication of cancer from man to man is so rare, if it really occurs at all, that it may be practically disregarded.

(4) That those members of the public in charge of or in contact with sufferers from cancer with external manifestations, or discharges of any kind, need at most take the same precautionary measures as would be adopted in the care of any ulcer or open septic wound.

(5) That in the care of patients with cancer there is much less danger to the attendant from any possible acquirement of cancer than there is of septic infection, or blood poisoning from pus organisms.

(6) That in cancer, as in all other disease, attention to diet, exercise and proper hygienic surroundings is of distinct value.

(7) That, notwithstanding the possibility of underlying general factors, cancer may, for all practical purposes, be at present regarded as local in its beginning.

(8) That, when accessible, it may, in its incipiency, be removed so perfectly by radical operation that the chances are overwhelmingly in favor of its non-recurrence.

(9) That, when once it has advanced beyond the stage of cure, suffering in many cases may be palliated and life prolonged by surgical and other means.

(10) That while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest present means of cure.

(11) That among the many advances in and additions to cancer treatment, the improvements in and extensions of surgical procedure surpass those in any other line, and fully maintain the preeminent position of surgical palliation and cure.

(12) That there is strong reason to believe that the individual risk of cancer can be diminished by the eradication, where such exist, of certain conditions which have come to be regarded as predisposing factors in its production.

(13) That some occupations, notably working in pitch, tar, paraffin, analin or soot, and with X-rays, if not safeguarded, are conducive to the production of cancer, presumably on account of the chronic irritation or inflammation caused.

(14) That prominent among these predisposing

factors, for which one should be on guard, are: general lowered nutrition; chronic irritation and inflammation; repeated acute trauma; cicatricial tissue, such as lupus and other scars, and burns; benign tumors—warts, moles, nevi (birth-marks), etc.; also that changes occurring in the character of such tumors and tissues, as well as the occurrence of any abnormal discharge from any part of body, especially if blood-stained, are to be regarded as suspicious.

(15) That while there is some evidence that cancer is increasing, such evidence does not justify the present alarm.

(16) That suggestions which are put forward from time to time regarding eugenic, dietetic and other means of limiting cancer, should not be accepted by the public until definitely endorsed by the consensus of expert opinion. Such consensus does not exist today.

(17) That so far as we know there is nothing in the origin of cancer that calls for a feeling of shame or the necessity of concealment.

(18) That it will be promotive of good results if members of the public who are anxious about their health and those who wish to preserve it will, on the one hand, avoid assuming themselves to be sufferers from one or another dreadful disease, but, on the other hand, will submit themselves periodically to the family physician for a general overhauling.

(19) That at all times and under all conditions there is much to be hoped for and nothing to be feared from living a normal and moderate life.

(20) That the finding of any abnormal condition about the body should be taken as an indication for competent professional and not personal attention.

(21) That watchwords for the public until "the day dawns" and the cancer problem is solved, are: Alertness without apprehension, hope without neglect, early and efficient examination where there is doubt, early and efficient treatment when the doubt has been determined.

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* During the four day Cancer Educational Compaign, held under the auspices of the Vermont State Medical Society, June 8-11, 1915, Dr. William Seaman Bainbridge, of New York City, presented the accompanying twenty-one "Articles of Faith" at several sessions. They form the conclusion of a paper entitled "The Cancer Patient's Dilemma. A Plea for the Standardization of What the Public Should be Taught in the Campaign of Education Concerning Cancer," which Dr. Bainbridge read at one of the sessions, and which appears in full in the Cancer Number of the New York Medical Journal, July 3, 1915.

PUBLIC HEALTH BILLS, CONTINUED.

"Governor has signed all Pure Food bills, Nurses' Registration bill (2nd amendment), Sanitary Engineering bill ($30,000), increase in Secretary's salary (from $3600 to $4500), Contagious diseases ($50,000), Vital Statistics bill."—O. H. P.

May 18th.

Latest corrections on list of bills not introduced by State Board of Health in re. public health matters:

Page one, S. B. 360 should be S. B. 361.

Page three, S. B. 1175 should be "Passed to" not "Approved by" Governor.

Page three, S. B. 1178 should read 1179.

Page three, S. B. 1148 should read 1184.

Page seven, S. B. 442 should read "Passed to Governor" instead of "Held on third reading file."

Page seven, S. B. 33 should read "Passed to Governor" instead of "Held on third reading file."

Page seven, S. B. 1183 should read "Passed to Governor" instead of "Held on third reading file."

Page seven, S. B. 1180 should read "Passed to Governor" instead of "Held on third reading file."

Add to the List of Bills on Public Health not Introduced by the State Board of Health the following:

A. B. 219—An Act to add a new section to the Penal Code to be numbered Section two hundred eighty-eight, relating to sex perversions and defining the same to be felonious. Passed to Governor.

S. B. 533—An Act requiring employers who provide hospital service for their employees and who make a charge therefor to keep books, etc., of such charges. Passed to Governor.

S. B. 1120—An Act to amend Sections seven, eight, eight-a, eight-b, and nine of an Act entitled An Act to regulate the sale and use of poisons in the State of California. Passed to Governor.

A. B. 1371—An Act to prevent the use of dining-cars as sleeping quarters. Held in Committee on Public Utilities.

Page one, A. B. 611, S. B. 484 now reads "Passed to Governor" instead of "Held on third reading file, Assembly."

Add to the list in re. Practice of the Healing Art, etc., the following:

S. B. 1039—An Act to regulate the practice of optometry; to provide for the appointment of a Board of Optometry. Held in Committee on Public Health and Quarantine.

May 24th, 1915.

Latest corrections on list of bills introduced by the State Board of Health:

Senate Bill 796 now reads "Approved by Governor."

Senate Bill 821 now reads "Approved by Governor."

Senate Bill 95 now reads "Approved by Governor."

Assembly Bill 597 now reads "Approved by Governor."

Page 2, Senate Bills 511 and 755 now read "Approved by Governor."

Page 3, Senate Bill 1175 now reads "Approved by Governor."

Page 7, Assembly Bill 540 now reads "Approved by Governor."

Add to the list Not Introduced by the State Board of Health in re. Public Health Matters, the following:

S. B. 655—Requires that all crabs shipped into the state be branded, showing name of place where caught. Passed to Governor.

S. B. 202—Authorizing Supervisors to employ visiting nurses for tuberculous patients. Passed to Governor.

A. B. 67—Anti-Vaccination. Refused passage in Senate.

Page 1, Senate Bill 339 now reads "Approved by Governor."

June 2, 1915.

Senate Bill 838 now reads "Approved by Governor."

Page 3, Assembly Bill 1283 now reads "Approved by Governor."

Page 5, Assembly Bill 589 now reads "Approved by Governor."

Page 5, Assembly Bill 524 now reads "Approved by Governor."

Page 5, Assembly Bill 758 now reads "Approved by Governor."

Page 6, Senate Bill 988 now reads "Approved by Governor."

Page 6, Assembly Bill 1565 now reads "Approved by Governor."

Page 7, Senate Bill 1180 now reads "Approved by Governor."

Assembly Bill 219 now reads "Approved by Governor."

Assembly Bill 1147, on page 6, should read "Not passed to Governor."

Page 1, Assembly Bill 770 now reads "Approved by Governor."

June 7th, 1915.

Page 4, Assembly Bills 184, 185 and 186 now read "Approved by Governor."

Senate Bill 1120 now reads "Approved by Governor."

Page 1, S. B. 148 now reads "Approved by Governor."

Page 1, S. B. 758 now reads "Approved by Governor."

Page 1, S. B. 482 now reads "Approved by Governor."

Page 1, first page of corrections, S. B. 533 now reads "Approved by Governor."

Page 1, S. B. 410 now reads "Approved by Governor."

Page 3, A. B. 1549 now reads "Approved by Governor."

Page 6, A. B. 1045 and S. B. 1101 now read "Approved by Governor."

Page 7, S. B. 33 now reads "Approved by Governor."

These are the final changes, the time for signing bills expired June 12th at 12 p. m.

REPORT OF THE TUBERCULOSIS SITUATION IN SAN FRANCISCO.

"The public measure most necessary for the control of tuberculosis in San Francisco at the present time is a special Tuberculosis Bureau of the Department of Public Health. This Bureau should be created with an annual appropriation of at least $40,000 for the single purpose of fighting the 'White Plague' in San Francisco."

This is one of the chief recommendations included in a special report on tuberculosis conditions in the city made by the San Francisco Association for the Study and Prevention of Tuberculosis to the Department of Public Health at the request of the latter.

The special Bureau would, according to the report, establish clinics in different sections of the city for free examination of patients; employ visiting nurses to co-operate with physicians in the care of patients and their families in the home; wage a campaign of education; supervise the disinfection of premises after death or removal of a patient; promote good housing, working and living conditions, and further investigate conditions in the city and make recommendations for bettering them.

Quoting from the Foreword of the report: "Tuberculosis is recognized as a preventable disease. If so, why does it persist in San Francisco? The answer in part is simple—the community as a whole does not fully realize the large number of human lives which the disease claims each year nor does it clearly understand what measures may be employed to prevent this unnecessary loss of life."

It is urged that tuberculosis is a common foe of civilization and that any city gains an enviable reputation by fearlessly fighting it. Quoting further: "It may be said that tuberculosis heads the list of causes of death in the United States and stands first or second in nearly all large American cities. The noticeable difference in cities is not so much in their relatively high or low death rate from tuberculosis, but in their efforts or lack of efforts to check the loss of life which their disease causes."

Regarding the prevalence of tuberculosis in this city, the report says: "More than one-eighth of all deaths in San Francisco during the three years 1912-1914 were caused by tuberculosis in all its forms. In other words, 2,688 of the 20,703 deaths from all causes in the city during the period resulted from this single preventable disease. This is one out of every 7.7 deaths," or nearly 13 per cent. The Association estimates that there are at least 8,000 living cases in the city to-day.

On the basis of the annual number of deaths and the probable number of living cases, the Association outlines from its experience the following measures which it considers necessary for controlling the disease in San Francisco:

1. A special tuberculosis bureau of the Department of Public Health should be created with an annual appropriation of at least $40,000.
2. Six hundred hospital beds for advanced cases (200 now available).
3. Two hundred public sanatorium beds for incipient cases (none now available).
4. Provision for children:
   - Hospital for active cases.
   - Preventorium for predisposed and physically subnormal.
   - Open air schools for predisposed and physically subnormal.
   - Open window school rooms.
5. At least twenty special visiting nurses.
6. At least six clinics for free examination.
7. Every known case reported by physicians.
8. Premises thoroughly renovated after death or removal of a patient.
9. Criminally careless cases forcibly detained.
10. Bad housing, living and working conditions removed.
11. Food protected from infection.
12. Sick insurance for afflicted working men and women and their families.

It is pointed out that tuberculosis is a public health problem and that measures for its control should be supported and conducted by the municipality, since "The time and money necessary for the campaign make it impractical for an organization supported by private funds to permanently carry on the work."

The report, which is illustrated with half-tones, diagrams and one large 16x20 map showing the location of deaths from tuberculosis in the city during the three years 1912-1914, is being printed by the Association and will be in the hands of the public during the week. It concludes with the following: "This report purposely does not go into the harrowing details of the misery, suffering and poverty which all too frequently result from tuberculosis. It is believed that such recitals are unnecessary to secure adequate measures to control this most fatal of all diseases.

"If San Francisco's progressive spirit, as evidenced in other civic improvements, may be taken as an indication, this city should at least rank with the leaders in the fight against this most fatal of all diseases.

"Why should it not lead?

"The creation of a Tuberculosis Bureau of the Department of Public Health is the next constructive step necessary in the campaign.

"Public health is purchasable. Within natural limits a community can determine its own death rate."

The report is signed by the Executive Council of the Association, as follows: Jesse W. Lilienthal, President; Wm. C. Voorsanger, M. D., Secretary; A. H. Giannini, M. D., Executive Secretary; R. G. Brodrick, M. D.; W. R. P. Clark, M. D.; Mrs. Wm. H. Crocker; Rev. C. S. S. Dutton; Geo. H. Evans, M. D.; Mrs. Wm. Haas; Geo. R. Hubbell, M. D.; Wm. P. Lucas, M. D.; and Mrs. Henry Payot.

With the distribution of the pamphlet the Association is sending out an appeal for funds to carry on the work in the immediate future, and, if sufficient funds are raised, to increase the visiting nurse and clinic service and make provision for children.

A. L. LENGFELD, M.D.

Dr. A. L. Lengfeld was born in Auburn, N. Y., in 1850, and came to San Francisco an infant in arms.

After serving apprenticeship as a druggist, he entered the Medical Department of the University of the Pacific, later the Cooper Medical College, and graduated in 1871. He never really practiced medicine, but early in 1872 opened a drug store on the corner of Geary and Stockton streets, and up to within a year of his death was actively engaged in the practice of pharmacy, doing not a little to elevate its tone.

In 1883 he was appointed Professor of Chemistry and Materia Medica in the Medical Department of the University of California, and shortly afterwards to the same position in the newly founded College of Dentistry in the same institution. He served for over fifteen years to the entire satisfaction of the University authorities as well as the students.

He was particularly active in promoting pure pharmacy, and besides helping to establish the College of Pharmacy of the University of California, he was a member of the Pharmacopœia Convention of 1890, and Vice-President of the same convention in 1900 and 1910.

About a year ago his health failed to such an extent that he was compelled to withdraw from active life and died suddenly on June 19th, being survived by a widow and one son.

NEW LICENTIATES.

Allen, Edgar Mosher; Allen, Elzora Butler; Anthony, Edward Haven; Ashmore, Frank; Augspurger, Elmer David.

Bailey, Le Roy Harrison; Barber, Edna Mabel; Barbour, Llewellyn P.; Barnesby, Percy Norman; Billingsley, Carey Val; Bittner, Clarence Lavan; Boerke, Isabel Caldwell; Brace, Robert Walter; Brady, Emmett James; Breitling, Carl Adolph.

Campbell, James; Carrington, Paul Miles; Cartmell, Theodore Mithoff; Carter, Joseph J.; Cary, Eugene; Charles, Harvey Philip; Coleman, James Edmund; Coleman, Joseph Furniss; Collins, Foster Kyle; Cook, Wm. Wilder; Cookinham, Franklin Hillman; Crawford, Joseph William; Crow, Lloyd Benjamin; Crum, Howard Chas.

Dacey, Cornelius Joseph; Davey, Roy William; Davis, Arthur Lee; Degnan, Samuel Bryan; Denney, Robert Stevenson; Dignan, Howard Henry; Domb, David Ber; Dubois, Willard Cecil; Dunham, Frank Hunt.

Edmiston, John Harper; Edgerton, Ambrose Earl; Edmonds, Wm. Frank; Elliott, Addison Eugene.

Falconer, Ernest Henry; Feilenboyen, Evsey Solomon; Fenton, Walter Wallace; Fiegel, Frank X.; Fish, Joseph Baer; Fishbaugh, Ernest Clyde; Fractman, Meyer Bernard; Fraser, Morton William; Fulenwider, Homer Lee; Fujimori, Naokazu.

Garland, James Asa; Gilbert, Jesse Vincent; Gifford, Allen William; Glenn, Robert Alexander; Goettsch, Arthur; Goyette, Sidney Aloysius; Grant, Joseph Foster; Green, Ralph Edison.

Hackett, Robert Kells; Hale, Nathan George; Hamilton, Julius Rugg; Hand, Henry Wm.; Happell, James McAndrew; Hasbrouck, Stephen; Hassett, Thomas Francis; Hatch, Ernest Downing; Hawkins, Harrison Morton; Hendricks, Hiram Porter; Heuler, Leo; Hinman, Frank; Hoag, Obe Haight; Hoagland, Chas. Clinton; Hoit, Henry Ambrose; Horst, Carl Herman; Huckins, Horace Seaver; Hunter, Randolph Frederick.

Irving, Walter William.

Johnson, Andrew E.; Jones, Floyd Burton; Jones, John Peachy.

Kahn, Maurice Guthman; Kane, Louis Matthew; Kell, Fred; Kerschbaumer, Rose Putiata; Kindall, Cleve Edwin; Kindall, Lloyd Elmer; Kilgore, Alson Raphael; Klussmann, Hans Otto Gustave Theodor; Krummes, Harry Peter.

Laecy, John Mark; Lee, Dorothea; Lien, Fred O.; Liles, Lester McKesson; Lindenbaum, Henry; Linehan, Mathias Daniel; Lipson, Isadorye Max; Littlefield, Edmund Wm.; Long, Melville Hammond; Luckie, Lorenzo Foster; Lyon, George Elmer.

MacArthur, Newbern Turner; Mack, Alonzo E.; MacKenzie, Donald Killiam; Marble, Ira Albertus; Marsden, Chas. Summers; Marshall, John Sayre; McAuley, John; McClelland, Mars; McGarvey, Harry; McGill, Wm. Bacon; McKenney, James Allen; MacKinnon, Robert Donald; Meade, Samuel Nixon; Meradith, Charles S.; Mermond, Roger; Miller, Byron Young; Miller, John S.; Moodie, Alexander Russell; Morehouse, Roy Fay; Moulton, Rachel Edna; Murray, Vance Bishop.

Nakaki, Kiyohide; Newell, Rufus Ingalls; Northrup, Fred D.

O'Byrne, Chas. Clayton; Oettinger, Bernard; Olds, Wm. Henry.

Parker, Kezia Augusta; Patterson, Louise; Peters, Harry Emerson; Plannette, Herbert Leslie; Player, Lionel Paget; Pond, Alanson Madison; Pratt, Frank Shumway; Price, Harmon Ellsworth.

Remaly, Charles Edward; Reuling, James Risley, Jr.; Richardson, Joseph Warren; Riggs, Lester David; Roberts, Ernest Eugene; Robbins, Fenwick William; Rolph, William Donald.

Scott, George D.; Seger, Fred Loraine; Servin, Guillermo Ramon; Shaw, Wm. Francis; Shea, John Joseph; Salisbury, Charles Scott; Scatena, Frederick Nicholas; Sherman, Louis La Folle; Silliman, John Calvin; Smith, Andrew Wm.; Smith, Ralph Thaddeus; Smith, Turner Burton; Sparks, Clara Ellita Pratt; Stevenson, Geo. Frederick; Stadelman, Eugene; Stafford, Charles Floyd; Stadtherr, Edward Frederick; Stephenson, Henry Augustus; Stone, Clara; Suttner, Conrad Nicholas.

Tanner, Herbert Battles; Thompson, Alice Lillian; Thompson, Roy Oliver; Tredway, Edward Everett; Tucker, Claude C.; Turnbull, Frederick Charles; Turner, Kenneth Beymer.

Van Dyke, James Andrew; Vermilye, Robt. Montgomery.

Wagner, Lafayette Franklin; Wales, John Leroy; Warner, Charles Carroll; Wagefarth, Paul; Werlein, Presley Ewing; Weston, Henry Reuben; White; Elizabeth Olivia; Whittaker, Fred J.; Wilkinson, Landy Almer; Willey, Harry J.; Wintermute, Chas. Ellsworth; Wolff, Maurice Berwin; Woller, Wm. Frederick; Woodward, Ernest Patrick.

Young, Philip Gouverneur.

Zieg, John; Zimmerman, Harold.

NEW MEMBERS.

Mareh, Irwin B., Richmond.
MacKinnon, Robt. Donald, San Francisco.
Bradfield, Geo. M., San Francisco.
Smart, Robt., Coronado.
Grant, J. F., San Diego.
Mahoney, Margaret J., San Francisco.

DEATHS.

Nourse, B. S., San Francisco (died in Sacramento, Cal.).
Thompson, James Maleolm, San Francisco.
Pinney, Henry Beers, San Francisco.
Helgesen, Segrid, San Luis Obispo.
Du Milieu, Emile A., Nevada City, Cal.
Bowman, F. A., San Francisco.
Woodward, R. M., San Francisco (died in Rochester, Minn.).
Brown, Archibald Robt., San Dimas, Cal.
Van Norman, Edgar V., Los Angeles.
Heinimann, J. M., Fruitvale, Cal.
Evans, Chas. W., Los Angeles.
Kuster, C. Edward, Los Angeles.
Bolling, R. E. (address unknown; died in Pasadena, Cal.).

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII OCTOBER, 1915 No. 10

EDITORIAL NOTES

1916—STATE SOCIETY—FRESNO.

The Council of the State Society, at a meeting held September 11th, discussed the various places which had extended invitations for the Annual Meeting of 1916. After carefully considering the various points in relation to the best interest of the Society and the profession as a whole, a ballot was taken which resulted in the selection of Fresno. The meeting will be held in the third week of April, 1916, at Fresno, and we are assured of ample and satisfactory hotel accommodations. It goes without saying that a royal welcome will be extended to all our members by the profession of Fresno.

Further information will be published later on in the Journal.

RECORDS—RECORDS—RECORDS!!

It is hard to make physicians see the importance of anything that looks like business. It is very difficult to make them see the commercial value to themselves of keeping careful and complete records of all their cases. The JOURNAL has repeatedly argued the paramount necessity for keeping such records owing to the increasing habit of the ordinary citizen to "sue the doctor." In fact, it is an open question whether or not the State Society should formulate some rule on this point which would withhold the benefits of its medical defense in suits brought against its members, unless the member can produce a complete and properly kept case history of his treatment of the former patient who brings the suit. In this issue of the JOURNAL are two papers of the greatest interest and importance as bearing on this subject. One is by Dr. Bine, read as a part of a symposium on the medical aspects of the Industrial Accident Law, and the other is by Dr. Huntington on the paramount necessity for standardization in the manner and method of keeping records of fractures. The time is rapidly coming when, if we, as physicians, do not keep full and carefully written records of the cases which we are called upon to deal with, the law will step in and make us do it, and probably there will be unpleasant details about such legal compulsions. Remember, your right to practice medicine is merely a police regulation and the law may at any time step in and say how you may practice and what you must do in order to preserve your police license; you have no *right* to practice; you have only a police license or permit to practice in a manner which is or may be prescribed. Keeping sufficiently full records is become a necessity of continued freedom of existence.

THE SAFETY OF PATIENTS.

More and more does it seem that the individual is asserting his inalienable right to seek medical opinion where and when he will; and while this right may not be denied, it is still not good for him. Conditions in connection with this phase of medical life, as in many others, are rapidly changing and while we must, as reasonable human beings, admit and accept such changes, it is well to remember the old order and, particularly, the *reasons* for the old order of things. Two brains are better than one. From consultation, from the rubbing together of thoughts, comes enlightenment. One person suggests what detail fits into the thought of another. Taken separately, and without the interchange of thoughts and comments, the separate examination and opinion of several medical men is not a good thing for the safety of the patient. And that was the reason for the old ethical law or custom that one doctor would not see, examine or express an opinion about the patient of another doctor, save and except when they two were together. It was in the interest of the safety of the patient. Even now, with our changing conditions, it may be possible, sometimes, to make people see the wisdom of this course of procedure.

MEDICAL PRACTICE ACTS.

For several years the American Medical Association has had in its employ experts who have been collecting all the various records in regard to the laws licensing the practice of medicine in all of the states and the decisions in the courts of law relating to such laws and various phases of their operation. The first volume of the legal department of the Association has just been printed. It is "Case Law on the Statutory Regulation of the Practice of Medicine." It may be had by addressing the American Medical Association, 535 North Dearborn Street, Chicago; the price is not stated. The book will be found invaluable to anyone who is interested in this subject of medical licensure, and for some years to come the subject will be of more or less interest. Eventually economic conditions will settle the whole matter, but that will take a number of years, in all probability. State medicine is approaching more rapidly than one would have thought would be the case, a few years ago.

DOCTORS AND CHARITY.

To say that the physicians of a community contribute more to charitable work than all the charitable organizations in that community combined, is to make a safely conservative statement of fact. Every physician knows that he will do a certain percentage of his work for which he will never receive any return whatever. All physicians are ready and willing at all times to advise on matters of public health, protection against threatened epidemics, and the like, or to give their actual services and time and effort for the public health of the people of the community in which they find themselves. It is ingrained in medical education and a fixed part of medical life. In view of these facts it has always seemed to the writer that for laymen to ask physicians to contribute in money toward the support of various charitable enterprises, was a sociologic blunder if not an impertinence. The conduct of public health movements, as the war upon tuberculosis, the study and prevention of cancer, and the like, are matters of primary interest *to the community as such* and their maintenance should be a community burden. If it is not assumed by the community, it should be assumed by the lay citizens; their part should be the contribution of necessary funds, whereas the portion of the physician is the contribution of his knowledge, his brains, his nerve force, his time and his physical energies—all of which overbalance anything the lay citizens may contribute. The following letters are appended without much further comment except to say that no matter how tremendously valuable the work of the San Francisco Association for the Study and Prevention of Tuberculosis may be, it is impertinent for that, or any other similar association, to ask physicians to contribute of their scanty means, to such financial support:

THE SAN FRANCISCO ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

August 12, 1915.

Dr. P. M. Jones,
San Francisco.

My Dear Doctor:—

As a physician you will appreciate the necessity of our making an appeal for funds to carry on the campaign against tuberculosis in San Francisco.

Following are some of the things we can do this Fall with your assistance:

Increase our free visiting nurse service.

Extend the free clinic service.

Provide for tuberculous and physically sub-normal children.

Wage a campaign of education.

The pamphlet we are sending you, under separate cover, outlines some of the measures which we believe should be in force in this city, and we trust will meet with your approval.

We wish to emphasize that we are using every precaution to avoid interfering with the practice of the private physician. Our aim is to render nursing and clinic service, only when it may be desirable or necessary. We want your moral and financial support.

Very sincerely yours,

JESSE W. LILIENTHAL,
President.
DIXON VAN BLARCOM,
General Secretary.
A. H. GIANNINI,
Executive Secretary.
MRS. WILLIAM HAAS,
Chairman Membership Committee.
WILLIAM C. VOORSANGER,
Chairman Education Committee.

August 14th, 1915.

Mr. Jesse W. Lilienthal,
President, San Francisco Association for the Study and Prevention of Tuberculosis, Flood Building, San Francisco.

Dear Sir:

Today I am in receipt of a circular letter dated August 12th and signed in facsimile of your name as President of the Association for the Study and Prevention of Tuberculosis. The circular is addressed to physicians and asks them to contribute funds toward the support of your Association and its wonderfully good work.

May I be permitted to suggest that appealing to physicians for financial support of public health matters is sociologically wrong? Physicians give more of their time, brains, energy and life to charitable work than do all the charitable organizations and all the private citizens charitably inclined in the community. In this very work of the Association of which you are President, a number of physicians are cheerfully giving of their time and energy vastly more than the contributors in coin.

I do not wish any word of mine to be construed as in the slightest degree belittling the work of your Association; it is marvelously good work. But it is public health work, and public health work should be supported either by the community as such, or by the lay members thereof who cannot help in the scientific and professional work but who can contribute in dollars. If I am wrong in this contention, I would very much like to be set right.

If you have no objection to my doing so, I would like to publish your circular and a copy of this letter in our Journal.

Respectfully yours,

PHILIP MILLS JONES.

TUBERCULOSIS—WARNING.

While on the subject of tuberculosis, it may not be amiss to print right here the following warning; apparently it is getting to be quite the habit to attempt to "work" people in the name of anti-tuberculosis enterprises:

The following warning is sent out by the California Association for the Study and Prevention of Tuberculosis:

A magazine called "Our Tuberculous Children" is being circulated in certain parts of the State, with the subscription price of ten cents a copy, for the purpose of establishing a sanatorium in New Mexico for tuberculous children. This society, while organized in Chicago, is not endorsed by

1. The Chicago Association of Commerce, Charities Endorsement Committee.

2. Not affiliated nor endorsed by the National Association for the Study and Prevention of Tuberculosis.

3. It is not affiliated with the Illinois State Association for the Prevention of Tuberculosis, nor the Chicago Tuberculosis Institute.

4. It was refused affiliation by the Mississippi Valley Conference on Tuberculosis.

5. Its promoters have never been identified with any organized tuberculosis movement.

6. There is no demand for such an organization, as the work they are undertaking is much better done by state and local tuberculosis associations.

7. Their method of raising money is objectionable, because only about 40 per cent. of the receipts are actually available for the work.

"PROGRESS OR RETROGRESSION?"

In the JOURNAL for August, at page 294, appeared an editorial note with the above caption. It referred to the recent reversal of form in Oakland and Sacramento, where through changing local and "practical" politics, health officers of known ability, "full time men," had been replaced by others. The little note seems to have attracted a good deal of attention, for a considerable number of letters have been received, all but two of them commending highly what was said at that time. The two adverse letters are printed herewith, both of them absolutely as written and without any *correction* or change whatsoever.

Dr. G. C. Simmons, of Sacramento, the gentleman who has been elected to the office of Commissioner of Public Health and Safety, is, admittedly, a man of education and training. This neither improves nor condones the situation. Incidentally it would seem that his duties as executive and responsible head of the Police Department, the Fire Department and the Health Department, as well as those of President of the Commission, and therefore Mayor of the City, would leave him very little time to devote to the position of Health Officer.

The gentlemen who write these letters cannot differentiate a matter of fundamental principle in municipal government from personalities or petty economies. They might well recall the words of one who spoke with authority: "Is not the laborer worthy of his hire?" Is Sacramento so poor that it must be the recipient of charity? Is it right for a physician who happens to be in independent circumstances when assuming public office, to gratuitously fill the place of a necessary public officer and thus keep one who must work for a living from a legitimate position? Why has it happened that various universities have established courses in public health and give degrees to those who qualify in these courses, unless it be that those who really think know that a trained "full time" man is the most reliable and economical health officer for a community? And what encouragement is it, supposing that we need such health officers, for anyone to do all this work and really learn the miniature of health matters, if some philanthropically disposed physician, who has enough to live on, comes along and says "I will do all this work for nothing"? "Penny wise and pound foolish" is quite old. The mixing of business sense with a scientific handling of public health matters is quite new. Sacramento seems to have made a fleeting attempt to grasp the latter, but soon slipped back to the former. And no matter how well educated he may be, nor how much of a gentleman and a scholar he may be, the philanthropic physician is not going to do as good work as the trained health officer who has gone into this sphere of activity for his life work. This is said impersonally and without prejudice. The cost of typhoid to Sacramento was approximately the interest on $3,000,000; the introduction of a chlorinating plant by the paid health officer reduced this approximately 73%. According to the letters below, Sacramento, by dismissing the paid health officer, saved $275 a month or $3,300 a year; the population is approximately 65,000; the cost per person of maintaining a paid health officer was 0.197 cents per year; the health officer saved the city approximately $130,000. How about business and science? The whole system of electing a health officer, or having a practicing physician or a "part time" physician as health officer is wrong. It is scientifically, hygienically, commercially and from the point of simple common sense, wrong. Ordinary business principles applied to municipal government, show it to

be wrong. All thinking people who have given the slightest consideration to public health matters, know it to be wrong. The Federal Government knows it to be wrong and has summoned health officers to gatherings in order to teach the contrary. Yet Sacramento knows better!

The communications referred to here follow:

Sacramento, Cal.,
August 11, 1915.

Dr. Phillip Mills Jones,
Editor State Journal of Medicine,
Mr. Editor:—

Refering to your Editorial of "Progress or Retrogression" in the last issue of the State Journal of Medicine; permit me to state that you have evidently been *used,* given the wrong tips by *sore heads.* I gain the conclusion because your editorial don't state anything like the facts surrounding the causes for the dismissal of Doctor Williamson.

Because a rotten administration installs an expensive and supernumerary official on the Public is the more reason that that official should be ousted instantly by a new administration. This was done by Commissioner Simmons, as you relate, and I fail to see why you should worry yourself about the matter.

Fortunately, for Sacramento, we have a local man amply fortified with brains, experience and industry who assumes the duties himself, saving the taxpayers this extra cost, and that man is Dr. G. C. Simmons, the Commissioner himself; a life resident and taxpayer of Sacramento, Cal.

Unfortunately, such articles as you have written appear too frequently and show plainly the lack of balance in the scientific mind. Why not combine a mite of common business sense with science? I venture to say scientific men would stand higher in in the public credit if they did. The cost of things and the ability to pay, it appears to me, are serious enough things to be taken into consideration.

At all events, your remarks about "political jobs" and "push" does not apply in the discussion as applied in "Progression or Retrogression" because Sacramento is well supplied with medical men fitted to preside over its Health Department and if that city is so fortunate as to have a public official patriotic and efficient to assume the important duty free, why! I don't think it is your time to "butt" in."

Yours truly
F. L. Atkinson, M. D.
Member Sac Soc for Med Improvemt.

P. M. Jones, M. D.,
Editor, Cal. State Journal of Medicine.

Under the editorial head of "Progress or Retrogression" in the August issue of "The Journal," you have made some grossly erroneous statements. When you speak of "Glaring instances concerning the dismissal of Dr. Williamson as Health Officer of Sacramento," of almost criminal disregard for good public health effort and almost complete reversal of form—downward" your statement approaches the libelous; especially when you further speak of "petty politics—a place—a job—some votes"—again, "If we, as physicians, did not know that the people pay the bill of petty, practical politics with their lives, it would be to laugh; as it is, it is enough to make a thoughtful citizen almost angry enough to *commit a few murders* of "practical politicians."

Dr. Williamson's place has been taken by a physician of thirty years standing in this community, a graduate of Harvard, a world traveller, who having been elected to the office of Commissioner of Public Health and Safety by an overwhelming majority, has actually and absolutely given up a large and lucrative practice, to serve the people *gratis* in *his self-appointed* task as Health Officer of Sacramento; thus saving this City $275.00 a month. You, nor any one else can justly criticize the present efficiency of the local Health department (backed by a Health Board of reputable physicians) nor compare it unfavorably with the previous administration in any particular, under Dr. Williamson.

It may seem difficult for you to grasp the fact that a member of the profession should, during these hard times, actually serve his fellow-citizens at considerable financial loss to himself and *absolutely without pay* in his capacity as Health Officer, but such is the case, and when these commendable efforts to save and serve, meet with scurrilous and unjust criticisms, and wholly unfounded statements such as appeared in your recent issue, it is high time that you receive the correct relation of the present status of affairs and the request that you make this as public as you did your original article.

Andrew M. Henderson,
J. W. James,
G. A. White,
Wm. Ellery Briggs,
F. F. Gundrum,
S. E. Simmons.

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ORIGINAL ARTICLES

NERVE INJURIES; THEIR INFLUENCE ON THE PERIOD OF DISABILITY.*

By THOMAS G. INMAN, M. D., San Francisco.

In no other structure in the body, the vital organs excepted, is a wound of moderate degree accompanied by such marked and long continuing disability as that which results from division of one of the important nerve trunks. Regardless of the treatment employed, the return of normal function in the enervated parts must first be preceded by complete regeneration of the peripheral end of the nerve. There is no exception to this rule. Proper treatment, however, will do much toward confining the period of perverted function within the limits prescribed by nature, and the intelligent selection of that treatment depends upon the early recognition of the presence and nature of an injury and a correct interpretation of the physiological processes at work in a given case.

When a serious nerve injury occurs practically alone it can rarely escape immediate detection, but nerve lesions, especially peripheral ones, occurring in association with severe injuries of other structures are frequently overlooked at the first examination. It is only after subsequent removal of bandages or splints that a loss of muscle function, disturbance of sensation or a cutaneous pressure slough only too plainly testifies to a separation between central nervous system and periphery. At this time, however, without the evidence afforded by an examination made immediately after the accident, the attendant is unable to know whether a paralysis is a direct result of the accident or whether it has arisen from conditions occurring in the process of repair such as involvement of the nerve in callous or contracting fibrous bands, to pressure by secondary hemorrhage or too closely applied bandages.

The knowledge of an existing nerve injury becomes at once of value. It will serve to warn the attendant not to apply his dressings too snugly, and indicate the necessity for their early and frequent removal for the purpose of re-examination, the application of massage or other appropriate treatment to the enervated muscles and skin.

Detection of a loss of tactile sensibility is of first importance in the emergency examination, for the areas are more clearly defined and larger than those for pain.[1] The fibers for deep sensibility accompany the branches to the muscles, so that unless motor fibers are divided, touching the skin with anything which deforms it is correctly recognized by the patient and excessive pressure can produce pain. Lack of appreciation of this fact is the first cause of failure to recognize a nerve injury.

Care is to be observed in detecting motor paralysis, for the movements with which contraction of the affected muscles is usually associated may be performed by other muscles. This is true especially of the smaller muscles of the hand, which rapidly waste when separated from their nerve supply, contractions developing as a result of over action of opposing muscles.[2] The findings at the first examination properly noted upon outline diagrams used for this purpose, will do much toward avoiding confusion and uncertainty in the future conduct of the case.

Following upon the loss of nerve influence the muscles undergo a degenerative change which goes on to complete loss of muscle substance if regeneration of the nerve does not take place. If complete regeneration in the nerve occurs, the muscles gradually regain their normal function, the time required varying with the distance of the injury from the periphery and the age of the patient. For complete restoration of function after division twelve to eighteen months are usually required.

Between recovery and absolute destruction lie many variations depending upon the amount of injury to the nerve, the treatment applied to keep the muscles alive and, where the nerve is severed, upon the ability of fibers in the cut end of the distal portion to form attachments with cut fibers of other nerves which still retain their central connections. During the progress of the case frequent electrical examinations will give information as to the severity of the lesion, the progress of recovery and aid in determining the time when exploratory operation should be performed.

The course of the degenerative change manifests itself to electrical examination in the following manner.[3] There is first noticed in five to seven days after injury a diminished irritability to direct and indirect stimulation by both the Faradic and Galvanic currents. The form of the contraction is normal. From the second to the fifth week stimulation of the nerve shows a loss of irritability to both currents, while the muscle does not react to the Faradic but to Galvanism, the irritability is increased. The Galvanic muscular contraction is slow and wormlike and usually the positive closing contraction becomes equal to or greater than the negative. The pathognomic sign of degeneration, however, is the slow wormlike contraction.

In from five to eight weeks, but mostly in from fifteen to thirty weeks, if recovery takes place there is a gradual return of nerve irritability for both currents. The direct Farado-muscular again returns, at first for stronger, then for the same current as on the sound side and the form of the contraction loses its slow form.

In those cases where conditions are such that no regeneration takes place in the nerve, indirect irritability to both the Faradic and Galvanic currents and muscle irritability to Faradism remain lost. The formerly increased direct irritability to Galvanism diminishes, sinks under the normal, gradually becomes slower until finally after months, perhaps years, a feeble wormlike contraction is obtained only with the strongest currents. This at last is unobtainable, the muscle fibers have disappeared and there remains only connective tissue.

With regard to prognosis it can be said that if by the third week complete reaction of degeneration is not present, the probabilities are that the injury is slight and that recovery will ensue in from six to twelve weeks. With complete reaction

* Read before the San Francisco County Medical Society, May 11, 1915.

of degeneration nothing can be said as to recovery, except that should it occur, six to nine months will be necessary for its accomplishment. If within the fifteenth to twentieth week there is a return of excitability in any one of the muscles of the affected area, it is a favorable sign and points to the likelihood of return of function.

During this time in any case massage and mild Galvanism is recommended by most authorities,[4] the same to be resumed after operative interference.

When a severed nerve reunites the sensation for pain and extremes of heat and cold is the first to return beginning in from six to sixteen weeks and is complete in from four to twelve months. Recovery for this form of sensation is followed within a few weeks by diminution in the area of tactile loss. This should be complete in from twelve to eighteen months. The ability to discriminate two points (the compass test) is the last to return and recovery cannot be said to be complete until the appreciation of this test is as good as on the sound side. Until this occurs the hand, for instance, is useless for delicate work.[2]

Injuries caused by industrial accidents rarely present a clean-cut picture. Nerves distant from the surface may be cut, lacerated, perforated, bruised or so compressed that the fibers are divided and the sheath left intact, the symptoms varying not only with the nerve involved and the amount of damage done, but with the part of the nerve affected, considered both longitudinally and transversely.

The question of operation is one most difficult to decide. We could hardly, in industrial accident cases, follow the recent advice of Delorme[5] and at once expose for examination all injured nerves. This would necessitate many useless operations, even though they may be mostly simple and nearly without danger. There is no doubt, however, that in those cases which eventually will require a freeing operation or nerve suture, early exploration would result in markedly shortening the period of disability.

Where the ends of a divided nerve have been exposed in an open wound, primary suture is the treatment of choice. If the nerve is exposed but not completely divided, and examination discloses swelling due to effused blood within the sheath, a few carefully executed longitudinal incisions into the nerve will serve to relieve pressure and protection during healing, will be secured by encircling this area with a fragment of fatty areolar tissue.[6]

Most difficult of decision are those questions which arise during the progress of a case where a nerve has received an injury of unknown extent but is not exposed for direct ocular examination.

Is the nerve completely or only incompletely divided?

If the injury is of a mixed nerve only a partial loss of pain and tactile sense over the area supplied by its cutaneous branch or a retention in some slight degree of pressure sense over the affected muscles speaks for incomplete division.

If electrical examination shows a partial ability to conduct and an incomplete R. D., the nerve is not completely separated. The contrary, however, is not true, for with complete motor disability and total R. D. the nerve may not be completely divided and go on to perfect healing without further treatment. Where incomplete division has been determined the case should be allowed to wait for a reasonable time in the hope that the separation is a physiological one and that the intact sheath will serve to aid proper regeneration.

Persisting complete loss of both motor and sensory function with a quickly sinking Galvanic irritability is indicative of severe injury.[1-3] This type of case requires close watching, care to preserve the muscle substance and protection of the skin from friction and pressure; decision to perform exploratory operation should not be too long delayed.

It would seem that it might be good treatment in any case where the nature of the accident and extent of the injury furnish sufficient ground for the suspicion that the nerve may be completely severed or that other conditions might exist which prevent regeneration to perform exploratory incision without waiting the length of time necessary to make sure that recovery is not going to take place.

The success of secondary suture seems in no way to be impaired by waiting from four to six months but, while it has been accomplished at much later periods with good results, the likelihood of complete regeneration seems to diminish progressively after this time, probably owing to a retrograde process affecting the corresponding ganglion cells. The presence of infection positively contraindicates any operative interference and where suppuration has occurred in the original wound considerable time should be allowed to pass after its cessation before attempting secondary operation.[1]

Even after exposing the nerve it may sometimes be impossible to positively determine whether or not it is going to regain its function unaided. Here, direct electrization of the nerve as recommended by Pierre Marie[6] might prove of value.

At any rate the region of the injury will be freed from debris, encroaching callous or newly-formed connective tissue bands removed, fatty areolar tissue placed about the exposed part and the wound closed.

Suture decided upon, care will be taken to conserve the blood supply to the nerve by not unnecessarily disturbing it in its natural bed, neither should the normal relationship of the ends to each other be changed by rotating them for the investigations of Stoffel,[7] lately confirmed by Pierre Marie, show that there is in the larger nerves at least a definite localization of the different elements. In the words of Pierre Marie: "If a nerve is directly irritated on its anterior, lateral or posterior side contractions can be made at will in the groups of muscles innervated by that nerve." He also says: "It is indispensable in suturing nerves that the surgeon endeavor to procure exact apposition of the fibers above to the corresponding fibers below." If it appears that the sheath is intact and there is no hardness to be felt indicative of neuromata or scar tissue, care should be taken not to cause further injury. No division with re-

suture should be attempted for the natural sheath will form a better guide to the union of the divided fibers than any artificial one.

With or without suture certain unalterable factors notably affect prognosis.

Of greatest importance is the point of injury and the extent of the lesion.[1] Injuries to peripheral nerves like the musculo-spiral, ulnar, peroneal, etc., are followed by better results than plexus injuries. The more central the lesion the slighter the chances of recovery. Injuries near the central origin have a very bad prognosis under any kind of treatment, owing perhaps to injury to the corresponding ganglion cells. This probably occurs in high plexus and bad sciatic injuries.

Under present methods of compensation in industrial accident cases added responsibilities attach to the duties of the attending physician. The recognition of previously existing defects in muscles and nerves or of diseases which may give symptoms similar to those caused by nerve injuries is important, for the recipient of an industrial accident who does not attribute all of his troubles to the accident is a rare individual indeed.

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THE RELATION OF THE SO-CALLED STRAINED BACK TO DISABILITY FOLLOWING INDUSTRIAL ACCIDENTS.*

By SOL HYMAN, M.D., San Francisco.

The object of this communication is to help to convince the insurance companies through their physicians, that increase of expenditure in the original investigation of industrial accident cases will result in the saving of a far greater amount in both the compensation paid to the injured man, and in the cost of his medical attention.

The cases are here considered purely from the insurance standpoint:

1—From the standpoint of the company and of the assured.
   (a) In the unnecessary medical expenditure involved.
   (b) In the unnecessary compensation paid.
   (c) In the unnecessarily high rate of insurance.
2—From the standpoint of the workingman.
   (a) Under total disability he receives 65% of his wages. Therefore there is a loss of 35% in his earning capacity which during any unnecessary period of disability must be considered as waste.

Any period beyond the reasonable length of time required for investigation and observation during which the lesion, if fairly typical, is unrecognized or untreated or both, must be regarded as a period of unnecessary compensation, medical attendance and loss of earning capacity.

This study is based upon 15 cases. The deductions are weakened in that I have been unable to follow them to their clinical conclusions; therefore we must assume that my diagnoses are correct. As most of the cases are so extremely typical, the error must be regarded as small.

Most real strains when not extensive are recovered from reasonably soon with rest in bed or with rest plus some form of immobilization, and are therefore of not great importance from the standpoint of accident insurance except as to their prognosis. The really important cases are those in which a diagnosis of "strain" has been made, but in which the incapacity is due to some other cause, and in which failure properly to diagnose or to treat the condition has resulted in the payment of medical services and compensation over an unnecessary period of time, and in a loss of earning capacity of 35% to the workingman over the same unnecessary period.

In these fifteen cases of injury to the back, referred to me as a medical referee by the Industrial Accident Commission or by an insurance company, but two had been correctly diagnosed. Of these, one was incorrectly treated, and the other presented the complication of a true traumatic hysteria (unilateral loss of all the common sensations and special senses) which had been overlooked.

The cases fall naturally into four groups:

(1) Sacroiliac, lumbosacral or allied trauma without fracture,
   Seven cases.
(2) Fracture of the spine,
   Five cases.
      1 complicated by a marked degree of osteoarthritis.
      1 complicated by a true traumatic hysteria.
(3) Osteoarthritis of the spine of very marked degree prolonging the incapacity in patients with otherwise minor lesions,
   Two cases.
(4) No diagnosis established
      1 case dorsal injury with no physical or radiographic findings (five plates taken).

1. The sacroiliac, lumbosacral and allied cases. Seven cases.

In two of these the disability had continued for 12 months and in the remaining five it was from five to six months duration *before the lesion was recognized.* It was found that in four of the cases there was the classical syndrome of sacroiliac trauma (tenderness over the sacroiliac joint, sciatica, a lumbar cord tender to palpation by rectum, scoliosis, spinal rigidity and negative radiograms), in one there was a classical right-sided sciatica with great tenderness to the right of the fifth lumbar spine, and in another extreme tenderness over the sacroiliac joint with no other abnormal signs. Another patient had suffered a slight rupture of the fibers of the latissimus dorsi at the crest of the ilium, not recognized until five months subsequent to the in-

* Read before the San Francisco County Medical Society, May 11, 1915.

jury. He returned to his work after four weeks of immobilization in a cast.

The important feature of these cases, from the viewpoint of industrial accident insurance, is that the total incapacity of the seven patients had been, up to the time I saw them, 51 months—i. e., the average patient in this series had been paid compensation of 65% of his earning capacity for a period of more than seven months, and had lost 35% of his earning capacity for more than seven months because his lesion had been unrecognized and hence untreated. All of these patients should have been at work on an average of not more than six weeks after the injury, a total of 42 weeks or 10½ months for the seven cases. As they had been paid compensation for 51 months, there was a loss of 40½ months of compensation by the companies and a loss of 35% of earning capacity over the same period by the injured men.

2. Fractures of the spine, five cases.

The longest case was 16 months unrecognized, the shortest three and one-quarter months.

The case which had been incapacitated for 16 months had been variously diagnosed as arthritis, Kümmel's spine and strain. It was found to be a fracture of the transverse process of the fifth lumbar vertebra.

A second case was in bed for three weeks following the injury, and was found, three and one-half months later, to have a fracture of the transverse process of the fifth lumbar vertebra with an extremely marked osteoarthritis of the spinal column.

The third patient had had bed treatment for five or six weeks after his injury. This was recognized as a fracture of the body of the first lumbar vertebra seven months after the injury by Dr. Walter Winterberg.

The fourth had been confined to bed six weeks for concomitant fractures of the tibia and os calcis, and had been up and about five months when it was established that there was a fracture of the body of the third lumbar vertebra.

The fifth was correctly diagnosed and treated as a fracture of the laminae of the fifth lumbar vertebra, a traumatic hysteria being overlooked for months.

In the four undiagnosed cases there had elapsed a total of 31 months between the date of the accident and the recognition of the condition, or a loss of almost eight months per case in the institution of treatment.

Fractures of the spine have in themselves a long period of disability (three months to a year or more), so that it is impossible to state just how great is the loss in compensation and earning capacity due to an average delay of eight months in the recognition of fractures of the spine, but it must indeed be not an inconsiderable factor in such a determination.

3. Osteoarthritis, complicated by a minor lesion due to an industrial accident, two cases.

In one there was a recognized but untreated sacroiliac trauma with an unrecognized osteoarthritis of the spine and hip-joints, one of the latter being ankylosed. The condition was recognized five and one-half months after the injury.

In the second case the patient had met with a severe accident, having been partially buried in a sewer cave-in. There had been apparently a small hemorrhage into his spinal canal, leaving no incapacitating residuum. The only physical signs remaining seven months after the accident were slight tenderness at the lumbosacral junction and very slight tenderness over the sacroiliac joints. Investigation at this time revealed a most extreme grade of spinal osteoarthritis of the hypertrophic variety. This man had been paid compensation for six months, when really a large part of his prolonged disability should have been charged to the long-existent disease of his spine. The same line of reasoning applies to the other case of this series.

In conclusion it may be stated that in those cases of injury to the back which do not yield to the ordinary measures applied for the relief of so-called strain, a full, even though costly, investigation should be instituted as a measure of economy in the matter of cost of medical treatment, of saving in the payment of unnecessary compensation, of loss of earning capacity of the injured man, and thus *perhaps* even in the reduction of the rates of insurance.

TRAUMATIC NEUROSES IN RELATION TO INDUSTRIAL ACCIDENTS; PROGNOSIS AND TREATMENT.*

By WALTER F. SCHALLER, M.D., San Francisco.

The purpose of this paper is to touch upon some important issues concerned in the relation of the psychoneuroses to industrial accidents, and particularly in relation to industrial accident compensation. The existence of functional nervous disease due to trauma is now well established, and it will not be necessary for me to make any argument before you, a representative body of physicians and surgeons, in favor of early recognition and diagnosis in cases of traumatic neuroses. Disability may begin with organic disease such as a fracture and continue as a psychoneurosis after the primary condition is cured. It is important then to mark the transition from organic to functional disease. The traumatic neuroses present definite clinical pictures and we divide them under the headings of traumatic neurasthenia, traumatic hysteria, and traumatic psychasthenia. The symptomatology of these different divisions is the usual symptomatology of neurasthenia, hysteria and psychasthenia, the etiology being of course psychic shock usually accompanying some physical injury. As to the prevalency of these diseases: in my records I find 15 cases referred by the Industrial Accident Commission since the Boynton law has been in effect and 12 records of cases seen elsewhere, covering a period of about three and one-half years; in all only 25 cases.

QUESTION OF SIMULATION.

Many cases of psycho-neuroses are regarded un-

* Read before the San Francisco County Medical Society, May 11, 1915.

justly, we believe, as cases of simulation. In our experience the examining surgeon is prone to suspect simulation in an individual whose complaints appear to be so manifestly disproportionate to the condition found in the physical examination; and this suspicion is followed by a lack of interest and patience with the sufferer who is often keenly alive to this attitude of the surgeon because of his neuropathic state. In some cases tests show conclusively that the patient is simulating certain symptoms, such as are sometimes brought out in the examination of the cranial nerves. Does simulation in an individual who presents a symptom complex of hysteria for example, necessarily mean that this individual is an out and out simulator? This question has been raised previously and answered in the negative by competent observers. There is some underlying element in the psychic constitution of these individuals which consciously or subconsciously predisposes to simulation. Babinski and others have emphasized this point, and I can refer to this condition in a number of cases.

INFLUENCE OF COMPENSATION ON DURATION OF ILLNESS.

Is a patient who has a nervous functional disease less likely to recover while receiving compensation, or is recovery delayed by such compensation? This question has been discussed by Oppenheim and a number of different authorities quoted, some believing that monthly compensation has an influence and others that it has not. This question is now under consideration by the Industrial Accident Commission who have favored an early and final settlement in certain cases. In general, I am inclined to believe that such an early settlement would act beneficially for the patient because the settlement of his claim would remove the suggestion of indefinite compensation from his mind and also create the suggestion of a limit of his disease, thus favoring recovery. The chief objection to a settlement in these cases is the difficulty of accurately determining the duration of disability. A little later I will refer again to this question.

PROPHYLAXIS.

The view has been accepted by most neurologists and psychologists that those who develop the psychoneuroses have an underlying neuropathic constitution. Is it possible for the commission or the employer to examine such cases and exclude these persons from hazardous occupation? Apparently this is not practical.

PROGNOSIS AND RESULTING COMPENSATION AND INFLUENCE OF TREATMENT.

How long do these cases last? I would state that all cases of psychoneuroses are curable—even if they are never cured. The outcome depends greatly upon the success of the following plan of treatment which has been submitted to the commission. After the physician in charge is convinced that the condition of the injury does not account for the persistence of the disability and that in all probability there exists a state of psychoneurosis, the patient should be isolated by being placed in an institution for observation and treatment for a period of at least one month. During this time he should be treated by psychotherapy and the adjuvant treatments of massage, electrotherapy or hydrotherapy. He also should be observed for possible simulation. At the end of this time the probable duration of illness should be estimated and the compensation adjusted accordingly. The prognosis therefore might be estimated on the amount of recovery in this period of one month. For example, in a certain case it was reckoned that the patient had recovered one-fourth of his normal capacity for work in a period of eight months following his accident. Therefore the probable total duration of disability was reckoned by multiplying the length of this period by four. If in a given case there has been no improvement in the hospital under the most approved means of treatment should the patient be given total disability? It does not appear to me that such should be the case. We are here dealing with a condition which is curable but the cure depends on many factors such as personality of the physician, the mental state of the patient, influence of environment and conditions of distraction, diversion and occupation, which may be favorable at one time and not at another. Given then a condition which is curable but in which one cannot immediately effect a cure what should be the prognosis and the compensation? It is our opinion that a person suffering from an hysterical paralysis of an arm for example with a total disability and not benefited by treatment should not receive the same compensation as a person afflicted with loss of an arm.

POSSIBLE INCREASE OF THE PSYCHONEUROSES.

Are we in danger of a considerable increase in the number of these cases of psychoneuroses by reason of the suggestive influence that these cases may have on other employees or by reason that they may be considered as cases of simulation by their companions and serve as examples for imitation? I believe that this question can be answered in the negative and there is no real danger from this source unless a number of cases of simulation have escaped detection by the commission and these have become a matter of common knowledge. Should such a condition arise, conviction and punishment of the offenders should act in a beneficial way.

To recapitulate, we might state: 1, That the number of cases of psychoneuroses is comparatively small in proportion to the total number of incapacitating injuries.

2. That this disease is a serious affection which is often not recognized until late and frequently confused with simulation.

3. That monthly compensation might act by prolonging the duration of illness, and that a final settlement is conducive to recovery.

4. That the prognosis of these cases is exceedingly difficult and often impossible of determination.

5. That if the condition is apparently one of permanent disability it is our opinion that compensation should not be proportionate in compari-

son with the organic injuries on account of the possible curability of these functional cases.

6. That there is no considerable danger of an increase of the traumatic neuroses.

7. That there is no practical way of eliminating those predisposed to the psychoneuroses from occupations of a hazardous nature.

SOME REMARKS ON INDUSTRIAL INSURANCE WORK.*

By M. E. RUMWELL, M.D., San Francisco.

The writer asks that these remarks be regarded as entirely informal, and not authoritative, and that any statements be regarded merely the outcome of a brief experience with the Medical Department of the Industrial Accident Commission of California.

The Workmen's Compensation, Insurance and Safety Act is a law and has been in force for nearly a year and a half, during which time the Medical Department of the Commission has gained many impressions and in some instances conclusions have been arrived at. These impressions have been modified from time to time, but the increased interest, more friendly attitude and the added co-operation of those medical men with whom it has come in contact has led this department to think that at least some of its conclusions are along the right track. It is quite impossible to cover the whole field in a paper of this sort and it is simply in the spirit of endeavoring to present to your society some of these ideas as they exist at the present time, that this paper is offered.

Very briefly, the fundamental idea of this whole act is to get the injured, idle, unproductive man back to work and to help him during his enforced idleness following accidental injury.

The relations, under the law, of the injured person to his employer and doctor are fairly definite. He is protected in that medical care must be accorded him by his employer for a period of ninety days following his injury. His relation to his doctor under these circumstances is a satisfactory one in that it is incumbent upon him to rigidly follow out the latter's instructions. Failure on his part to comply with these jeopardizes any compensation which he might receive under the law. Having the patient under proper discipline naturally aids the medical man in securing better results.

The relations of the medical man to the insurance carrier, in order to be put on the best footing, carry certain obligations on his part. He must remember that he is to be reimbursed by the insurance carrier, and therefore if he accepts such arrangement he should aid the carrier by keeping it informed as to the nature and progress of his case. This is accomplished by rendering accurate and early reports.

These reports have aroused a great deal of discussion. They are necessary from a business standpoint. There is no need for them to be made onerous by the carrier. They can be brief and a multiplicity of reports should not be demanded. It has been noted, for instance, that certain final reports are asked of physicians, involving the answering of a great many questions necessitating the consulting of history, interviewing of patient, etc., procedures taking up at least twenty minutes or a half hour. For this no recompense is offered the surgeon. These reports are not needed in the average case, as enough information has been gained by the first and necessary subsequent reports. Extraordinary procedures where needed should be reported and the carrier given the opportunity to advise in the premise. The carrier is responsible for the cost of these, and has the right to be kept informed as to their nature.

As to the making out of bills for services rendered, it is only fair that doctors state definitely what they have done. This is a business proposition. An intelligent approval of such bills is contingent upon a full description of the service rendered. Doctors must also remember that many of these companies operate from a distance, and that offices in this city are merely branch offices and business transactions taking place here are subject to the scrutiny of their home office. If a medical man is chosen to take up this work it is incumbent upon him to see that the care of his case does not involve attention that is not absolutely necessary. For instance, one doctor having charge of a case of a fractured patella, rendered a statement in the sum of $22.50 for setting this fracture, after which he made 168 visits at a charge of $2.00 a visit. Comment on such statement is not necessary.

As to the relation of the insurance carrier to the medical man: The wide institution of insurance against industrial accidents, in this state at least, is a new procedure, and in all probability as time goes on some of the methods adopted by insurance companies will be modified, and it is likely with a better understanding of the work in hand, that confidence between the insurance carrier and the doctor will be greatly increased.

The employer in purchasing insurance against industrial accidents conveys the whole responsibility of the care of the injured individual, consisting of proper treatment, hospital attention, etc., to the carrier. Therefore the carrier assuming this responsibility, is required to select medical men to take charge of its cases. No fault can be found with such action if the choice is made with reference to the ability of the medical men and the suitability of their surroundings in the treatment of these cases; but where such choice is made with the simple idea of diminishing medical fees, the Medical Department of the Commission believes that the end result will prove a poor one from an economic standpoint. In discussing this matter the medical director of one of the insurance carriers stated that they used the fee schedule as adopted by the State Medical Society, but that in large cities they had another schedule because they found that they could have the work done more cheaply where proper organization could be attained. It is right and proper that insurance carriers should be conversant with the personnel

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of the men employed, but it does not seem wise that they should interfere with the prerogative of the average man in attending these cases if he so desires, with the simple idea of cutting down a system of charges to which they have already acquiesced.

Carriers have assumed the right of reducing fees. The Medical Department of the Industrial Accident Commission thinks that they might also exercise the reverse function, and raise fees where the doctor has erroneously claimed less than the fee schedule entitles him to.

Being responsible for the payment of medical attendance, the carrier under the law has the right to remove its case from the hands of one doctor, and place it in those of another. The mere fact that the original attendant on the case has not some arrangement with the carrier for the payment of services, is not, in the opinion of the Medical Department of the Commission, a good and sufficient reason for such action; and it believes that any regularly licensed practitioner who desires to do this work under the provisions of the fee schedule, should be protected in that prerogative. It desires that the patient and employer be satisfied with the selection of medical men, and it believes that the confidence of the patient in the ability of his own medical man, is a great factor in aiding in his ultimate recovery and his return to work. It is undoubtedly a fact that such individual would have more faith in the word of his own doctor and will believe that his own doctor will have his interest more at heart. In turn the medical man will be more familiar with the idiosyncrasies of the patient. Accordingly, all other things being equal, the State Compensation Insurance Fund has allowed the injured individual to select his own medical attendant. However, under certain circumstances the fund endeavors to guide in this selection, and recognizes the services of regularly licensed practitioners of medicine and surgery *only* as being eligible to care for industrial accident cases coming under its jurisdiction, and insurers are advised that the services of such as osteopaths, chiropractors, naturopaths, etc., are not acceptable unless prescribed by regularly licensed practitioners of medicine and surgery.

The remarks immediately above must not be construed to mean that the commission or fund believes that the injured workman should necessarily have his own doctor. The law provides that the employer should furnish medical care. However, a liberal interpretation of this should be allowed as indicated above.

The question of suit for malpractice in the care of these cases has been spoken of. The doctor, though paid by the insurance carrier, acts for himself and plays the role of an independent contractor, and therefore is responsible for the medical attendance on the case. However, if the insurance carrier has employed the doctor, and he, through inefficient treatment has prolonged disability, etc., then the carrier has by negligently employing such an inefficient man, rendered itself responsible for any increase in medical cost or compensation which may arise out of improper treatment.

However, it is undoubtedly true that the insurance company through the regular administration of its business, can be of the greatest aid against such suit. No man who has proper records on file, who has by the aid of the insurance carrier had consultation and laboratory investigation, who has on record testimony as to the progress of the case, nature of treatment, and who has given conscientious care to his patient, need worry about the result in any suit for malpractice. The Industrial Accident Commission is endeavoring to maintain an attitude of discouragement toward such procedure, and incidentally it has been found on inquiry at the office of the State Medical Society, that there is record of but two suits having been filed in this type of work.

It does not come within the scope of this paper to discuss the fees as adopted under the fee schedule, but the writer will take the liberty of stating in part what, in the opinion of the Medical Department of the Commission, is a proper interpretation of this schedule. The carrier has to be guided by some standard. This standard in this state is a fee schedule, and the interpretation of this fee schedule is a matter of the greatest importance. The very nature of medical service is such that a fee schedule must be elastic. In rendering statements for their services medical men must be honest in the amount of attention given to the individual case and in the estimate of the value of the same. It is essential that a feeling of confidence be established between the insurance carrier and the medical man. Undoubtedly at the present time many medical men feel that any statement rendered to an insurance company is liable to be subject to request for reduction; and many insurance carriers believe that statements rendered by medical men are made out with the idea of meeting such request. Fundamentally this is all wrong.

It would seem at the present writing that an endeavor toward the establishment of a better feeling in this relationship might be instituted by the insurance carrier. If the insurance carriers are willing to accept and do accept reports from medical men as to the condition of the injured individual, as to the degree of disability suffered by him and so on, then the insurance carrier should be willing to accept the word of the surgeon as to what will be the proper remuneration under the schedule for the service he has rendered. In this very regard may be mentioned the fact that the Medical Department of the Commission has come in contact with schedules issued by carriers doing business in this state, which are at variance with that adopted by the State Medical Society, Industrial Accident Commission and insurance carriers. In the very first part of this latter the following paragraph is to be found: "These fees represent a minimum. Fees higher than schedule will be approved when warranted by extraordinary difficulties encountered by the surgeon." In one schedule issued by an insurance company this whole paragraph is omitted. In the fee schedule issued by

one other company, the fact that fees quoted represent a minimum, is omitted. The Medical Department of the Commission holds that such modification of the fee schedule is not in keeping with the establishment of the best relationship between the carrier and medical man.

Industrial accident surgery is not altogether the work for the young and inexperienced man. It is well to remember that other issues are at stake beside the mere relation of doctor and patient; the mere matter of treating a man and getting a result. There has to be taken into consideration the future ability of this man to earn his living, the payment of compensation in case he is not fully recovered, and the matter of future justification of the methods of treatment used—all of which may be subject to the scrutiny of the Industrial Accident Commission.

In many instances it has required men of the very keenest power of observation and great clinical experience to cope with some of the problems that have arisen. Take, for instance, the matter of malingering, cases coming under the caption of the "traumatic neuroses," serious bone injuries, and many other pathological conditions necessitating mature and sober judgment. The character of the reports that come under the observation of the Medical Department of the Commission, have very accurately confirmed the opinion held by it of the ability of the doctor and the work done by him.

Increased attention has been drawn to certain pathological lesions. In this regard could be mentioned instances where very serious skeletal injuries have not been found until a referee has investigated the case, for instance, a number of fractures of the spine have been discovered where no mention of the same has occurred in reports from the first attending surgeon. Special attention has been drawn to injuries of the hand with especial reference to the proximal row of carpals, to the presence of constitutional affections such as syphilis, tuberculosis and their relation to accident, and increasingly to the relation between tumor and trauma. These latter having great significance in the matter of cause and effect as bearing on compensation.

Considerable misunderstanding has existed as to what reports should be rendered the Industrial Accident Commission and the State Compensation Insurance Fund. All industrial accidents requiring medical aid or causing disability lasting through the day of injury, must be reported to the Industrial Accident Commission. The State Compensation Insurance Fund is an insurance carrier and from surgeons attending injured individuals whose employers are insured with it, the fund asks a preliminary, brief surgical report covering the accident sustained. This is practically all that is asked. This report consists of but eleven questions, one-half of which can probably be answered in one or two words. Subsequent very brief bi-weekly reports are asked where cases are of a serious nature requiring continuous medical attention, or where compensation is being paid. Where report is asked and is contingent upon examination being made, such examination is paid for.

In considering bills for services the spirit of the fee schedule is followed out, and fees as noted therein are regarded as minimum. A representation of unusual service is always considered. In this consideration the medical man is given the benefit of the doubt as he is on the premises and knows what is required. Where it is the question of approval for unusual procedure not scheduled, advice is sought from men doing similar work as to what would be a proper fee under similar circumstances. The fund holds that the medical man is its representative, and relies upon him to carry out these services as economically as is consistent with good work and the proper payment for the same.

This work is a good work. It would seem that as time goes on, the attitude of many which at this time may not be favorable, will change, and as the work is better understood it will be found to be of greater interest and profit than is now thought. The writer believes that the great factor in work toward better understanding between the insurance carrier and the doctor, is the establishment of good faith. Once this is accomplished, the attitude of all toward this work will materially change. The injured man will receive better care and consideration. The insurance carrier will be asked less for medical expense and compensation. The cost of this care, namely, the payment of premium on the part of the employer, will be diminished, and the doctor will be properly paid for his work.

INTERNAL MEDICINE IN RELATION TO INDUSTRIAL ACCIDENTS.*

By RENÉ BINE, M. D., San Francisco.

When the Chairman of your Executive Committee asked me to participate in this evening's program, it was with the greatest reluctance and hesitation that I agreed to do so. My reason for wishing a postponement of this symposium was to allow further time to study the records of the Industrial Accident Commission as well as to permit an extensive study of the literature, little of which is available in our San Francisco libraries. But in view of our holding no meetings in June and July, your Executive Committee deemed it wiser to hold these discussions tonight rather than to wait until August.

In the remarks that are to follow, it must be well borne in mind that the entire field under discussion is new to the large majority of California practitioners, and it must be realized that I am only attempting in a very sketchy way to point out the problems with which the internist is confronted when brought face to face with the Compensation Act, and, in doing this (however superficially), to stimulate all of you to better observation of cases in the future, so that when we have another symposium on this subject we may be able to throw more light on many of the difficult questions confronting us.

* Read before the San Francisco County Medical Society, May 11, 1915.

Some of the statements that I am going to make are based upon cases personally observed here, and of others studied in foreign clinics a few years ago. In addition I have borrowed freely, as will be seen, from the articles of Rumpf in Gumprecht's book.

In the past, trauma was considered an etiologic factor in the production of many internal diseases. However, thanks to bacteriologic studies, the importance of trauma was greatly minimized. More recently, however, investigations have been renewed to determine the relationship of trauma to disease, the impetus to this study having been given by the increasing amount of sociologic work which frequently requires the physician to decide in a given case as to the exact relationship between an existing disease and a previous accident. As a result of this, our knowledge on these subjects has grown rapidly; extended particularly, however, because of the great opportunity for such study in places where laws similar to our own have been enforced.

To the practicing physician naturally falls the greatest part of this work. It must be remembered that his function in these cases is frequently not alone that of healing the patient, but that he must act as a judge as well, frequently called upon to give his opinion. The Industrial Accident Commission and the insurance companies usually act according to the advice of the attending physician unless he be proved absolutely wrong—e. g., if a wrong diagnosis be made, or if a patient be found able to earn his living after the doctor decides to the contrary. In many instances the questions asked of the physician are difficult to answer. In addition to the objective difficulties, there frequently are added, in doubtful cases, such factors as ordinary human sympathy, particularly when called upon to say whether one's own patient has been incapacitated by a previous accident. It is naturally unpleasant to testify against a patient who feels that his own family physician should back him up in his demands.

The doctor must remember that he is not acting as a private individual, but in making out his reports he is really acting as a state official. He should not only say that in his opinion a certain condition is the result of an injury; he must give his reasons for this belief.

In order to give an opinion as to whether a disease is due to or aggravated by an accident,

1st, we must know the condition of the organs (related to the present disease) before the accident, or at least immediately after, so that we can prove that the disease did not exist at the time of the accident.

2nd, the nature and course of the accident must be definitely proved.

3rd, the development of the disease after the accident must be carefully observed.

The above three conditions are of course seldom given.

We are accustomed to accept the statement that the patient "feels well" as equal to his "being well," whereas we really know that cardiac, pulmonary, or renal disease may exist for years, the patient being during this time able to do his regular work, free from symptoms. We furthermore know that a medical examination often discovers no abnormal signs, whereas the patient's ultimate history, or even a post-mortem, may testify to marked changes in the internal organs. Practically all that we can say in many instances is that probably the patient was normal before the accident.

It must be borne in mind that the meaning which the Boynton Act conveys, is that an individual who is able to do his normal work is accepted as a normal man by his employer, and, for this reason, strain or accident of his occupation which would not incapacitate him, but does so because of some physical impairment, constitutes an accident. However, if a condition of disability supervenes because of previous organic impairment, and this condition of impairment might have supervened at that time, whether the individual had undergone the strain or not, then there is no accident under the meaning of the Boynton Act.

The following cases from the records of the Industrial Accident Commission are apropos of this point:

Case No. 1.—A vigorous, healthy young man of more than average physical strength, after supper on June 24, 1914, went back to do some overtime work and worked very hard and rapidly, loading cars, from 7 until about 11 p. m. At this time he was seized with violent abdominal pain which persisted until next morning, when it ceased very suddenly. Was treated by a doctor for "a strain" until the morning of 27th, when he consulted another physician. Was immediately taken to hospital and there showed the classical picture of peritonitis. Opening abdomen, gangrenous, ruptured appendix found, with acute purulent peritonitis of sufficient length of standing to have given rise to general gangrene of the omentum, the latter being at the point where it would not even bleed when cut close to its attachment.

Remarks: It is of course quite unlikely that any over-exertion to which the patient may have been subjected as the result of his work gave rise to an acute appendicitis, with, judging from the symptoms, a rupture of the appendix inside of 12 hours.

Case No. 2.—On January 22, 1914, was kicked by a mule. He dodged, not being struck by the mule, and immediately thereafter suffered severe pain in abdomen. Was treated for a perforation of an abdominal viscus, operation disclosing perforation of an old ulcer of duodenum. Testimony showed that there had been a duodenal ulcer which perforated apparently at time of dodging the mule kick.

Remarks: To support the theory that there had been ulcers previous to the injury, the doctor testified that there had been pain and evidence of the disease immediately preceding the day of accident, testimony showing that there had been, previous to accident, a history of symptoms characteristic of ulcer of stomach or duodenum. If there had been no ulcer, the alleged accident could have produced no ulcer and no perforation. There being no history of adhesions which might tear on sudden motion or exertion, such cause for perforation was eliminated. Ulcer was just about to rupture, and might have ruptured at any time, with or without the exertion which occurred.

The history appears to show a clear case of

perforation of duodenal ulcer which happened coincidently with an exertion which was not much out of the ordinary.

Case No. 3.—W. B. Testimony in this case showed that on March 16, 1914, patient was working as a lumber grader and while so engaged was threatened with serious injury by a piece of timber carried by workman immediately in front of him. The timber was turned towards him and threatened to strike him in the face, injuring eyes and nose. In order to escape injury he suddenly threw head backwards and suffered an injury to neck that very closely approximated a dislocation of the vertebrae. Immediately began to suffer with violent pains in head and the next day apparently had a stroke of paralysis. Aug. 10, 1914, the medical referee thought that there was either a cortical or sub-cortical hemorrhage, recurrent and increasing, or a cerebral tumor with hemorrhage in it as the first symptom. The remittent character of the symptoms led the doctor to believe that the patient was suffering from increasing intracranial pressure. There were signs of meningeal irritation as well. Pressure was evidenced by choked disc. The pain the patient complained of at the neck at the time of the sudden movement of his head, the doctor believed to have been a simple muscular spasm induced by the sudden unexpected action. The doctor said he could not establish any relationship between the action of and the onset of the intra-cranial symptoms which began the following day. It is conceivable of course that in a predisposed individual with diseased cerebral vessels, the increased pressure from sudden fright might be the cause of rupture, but this he only mentions as a possibility. September 9th an autopsy was performed showing that the man died as result of increasing cerebral growth confined to the left cortex in the parietal region. Microscopic sections proved the growth to be a glioma of the brain.

We must also remember that experience shows that the greatest damage to internal organs—e. g., heart, lungs or abdominal viscera, or even of nerve structures—may occur without skin or bone showing the slightest evidence of injury.

To prove the traumatic origin of any internal disease, many insist upon there being continuity of symptoms—i. e., from the time of the injury to the time of the development of the illness. But while it is a good thing to try and prove this fact, it is not *essential* that it be proved, for many internal diseases develop gradually and slowly, and do not show any symptoms. (E. g., a brain abscess may be found years after the injury, though the post-mortem may show its relation to the injury or at least a great probability of its relationship.)

After looking through the cases of interest to the internist in the files of the Industrial Accident Commission, I find that some of the greatest difficulties encountered are due to the fact that so few physicians make complete and thorough examinations right after the accident, or even within a reasonable time afterward. As will be shown by the reading of a few cases very shortly, the importance of a thorough physical examination including, whenever possible, urine and blood examinations, with the record of all findings in black and white, cannot be overestimated. The attention of physicians in this state has been called to the necessity for taking X-ray pictures in all cases of fractures, whereas the value of history taking has, I believe, been sadly neglected. After a fracture of a rib there should be included in the records definite details as to the condition of the pleura and lungs. It is not sufficient to say that the patient has a fracture of the 7th or 8th rib, but note should be made of the presence or absence of signs proving the existence of a chronic tuberculosis before the accident, for as will be seen below, it is quite difficult at times to decide whether or not a tuberculosis of the lungs or pleura has been the result of the accident, or whether it existed prior to the accident.

The same detailed history should be taken in purely surgical conditions. The impairment of motion in a given joint should be given in the original examination; also evidences as to the existence of rheumatism. Patients frequently claim compensation, attributing chronic arthritis to an injury, when as a matter of fact cracklings could be elicited in joints remote from the site of trauma at the time of the accident. The condition of the musculature of the injured limb should be noticed, as frequently patients complain of impairment of function after an accident, whereas the trouble antedated the accident. In the noting of fractures of the ribs or injuries to the spine, it is not sufficient to say that this occurred, but one should likewise state the exact line in which the fracture is demonstrated, noting, e. g., whether the rib is fractured in the anterior axillary, posterior axillary, or nipple line. This is important in view of the fact that nearly all fractures of the ribs get absolutely well inside of one year without leaving any symptoms, so that most patients after one or two years cannot even locate the site of the fracture. On the other hand, they will frequently complain of tenderness which will be far away from the broken rib or vertebra. The original report of the accident should not only make mention of swelling of joints or other existing conditions, but should add a line suggesting whether or not it is the opinion of the examiner that these conditions antedate, or whether they are the result of the accident. The omission of this statement renders it impossible to draw conclusions at a later time.

LUNGS AND PLEURA.

Of the *medical* cases submitted to the Industrial Accident Commission, probably the most frequent ones have to do with disease said to follow injuries to the chest, resulting either from contusions of the chest or as a result of fractures of the ribs, or indirectly as a result of thrombosis due to infectious materials carried from remote parts. First in frequency come fractured ribs, the latter resulting very seldom in tumors of the rib, in hemothorax, chylothorax, pneumothorax or empyema. Scab wounds or punctures may of course perforate arteries, whether the internal mammary or intercostals, with resulting hemorrhage. The most frequent complication of fracture of the rib is pleuritis, this usually being dry, though less frequently, exudate occurs. Contusions of the chest are at times followed by pneumonia, the chill occurring frequently from a few hours to one and a half days later, and such complications as pleuritis or hemorrhage may or may not be absent. The

pneumonia is at times of the typical lobar form, though at times with so little fever or rusty sputum that the question arises as to whether or not the condition is just a slight hemorrhagic infiltration. At times, as a result of injury, one sees multilobular foci. In other cases there are chronic pneumonic processes without tuberculosis.

We often see cases where hemoptysis occurs without tuberculosis, this symptom persisting some length of time; also cases where tuberculosis is found. It is very doubtful whether one can get hemoptysis as a result of physical exertion in a normal lung. In order to say that hemoptysis is due to trauma, (1) the time of occurrence must be definite, and (2) the injuries must be sufficient to have injured the lung. The injury need not be immediately followed by hemorrhage, as has been claimed by many. The torn edges of the lung may rapidly heal and the bleeding vessels may be closed by thrombosis. In fact, one case has been reported where death occurred 40 hours after the injury and where the torn lung was so glued together that at the post-mortem one could inflate the lungs to a very great degree without any air escaping at the torn edges. Where the lung was healed after a tear, a deep breath, a great exertion, or coughing, may rip the lung open and thus lead to the hemoptysis.

In the literature one finds the following interesting cases:

(a) A man fell from a horse and 12 hours later had his first hemoptysis. A post-mortem performed shortly afterwards showed a rupture of the lung.

(b) In another case the patient had a severe contusion of the chest wall and only six days later did the hemoptysis occur.

Of course, the slighter the degree of the injury, the greater must be the assumption of a previous disease. It must be remembered that severe injury of the lungs may occur without there being any evidence of hemoptysis—e. g., (1) if a tear of the pleura occurred at the same time the blood may go into the pleural cavity, or (2) if communication between the bleeding spot and the larger bronchi be shut off rapidly by the formation of clots.

In dealing with the subject of tuberculosis it must be remembered that while it is theoretically possible, it is practically impossible that a tear of a normal lung should be followed by tuberculosis as the result of the settling down of bacilli in a hemorrhagic effusion. Of course, the marked aggravation of an existing tuberculosis by an accident is in a measure entitled to compensation, just as if the original tuberculosis resulted from the accident. It is therefore of practical value to determine,

1st—Whether the disease was latent—i. e., not demonstrable with the usual methods, and then converted into a *manifest* disease.

2d—Whether an inactive tuberculosis which was, however, demonstrable as T. B., was converted into a *progressive* disease.

3d—Whether a progressive T. B. was really aggravated by the accident.

These points are very hard to decide at times in view of the fact, (a) that we do not know the conditions before the accident; (b) the course of a tuberculosis aggravated by trauma does not necessarily differ from that where no trauma occurred.

An aggravation of a tuberculosis may be directly the result of an accident, as for example, when a lesion flares up at the site where the blow occurred, or, it may be an indirect result, as for example, a general aggravation due to a lowering of resistance. The latter case is particularly hard to prove at times.

As signs of a true exacerbation we consider,

1st—Hemorrhage, not necessarily immediate, as the blood may stay in a cavity or may form a spontaneous, temporary clot, or the blood may be swallowed. The effect of a hemorrhage itself is usually bad, as it seems to produce an exacerbation according to most observers, though of course this does not necessarily follow.

2d—Another symptom would be the presence of fever in a patient who was able to work before. Here of course the evidence is quite clear.

3d—Pneumonic processes may predispose to tuberculous involvement of the affected lobe if the patient be already the carrier of a T. B. focus in another part of the lung. This, however, does not often follow.

4th—The occurrence of a pleurisy.

In deciding on many of these cases we have to consider,

1—Was the patient well and working up to his usual mark?

2—Was the trauma suitable to cause an existing T. B. to break out?

3—Did it break out in the traumatized area?

4—If other injuries followed the contusion, did disease in any other part render a connection with a T. B. and trauma possible?

5—If the injury was that of a nature due to work, was the work performed really above the ordinary so that pressure could rupture a vessel in a cavity with a T. B. focus?

In deciding many of these cases it must be remembered that we may have a hemorrhage from a T. B. lung and no evidence of T. B. be found clinically. This does not exclude the possibility of T. B., for cases often occur medically where a subsequent course shows T. B.

The following cases well illustrates many of the points discussed:

Case No. 4.—Had a bad fall on March 24, 1914, in which incurred a broken leg and experienced at the same time pain in the lower right chest. Perfectly healthy up to time of accident, doing hard work. Claims to have had no fever at any time; within a week or two after his injury began to spit blood, evidently from lungs; at times only small clots, at other times, more particularly recently, there have been quite large hemorrhages. Examination at a later date showed a man rather weak and dyspneic without fever, with an area of dullness, crepitant rales and bronchial breathing in right lower lobe just at the place where he felt pain at the time of accident.

It is very probable that he has at the present time an abscess of the lower lobe of right lung, although it may be a localized area of tuberculosis. In either case, no doubt but that he had, as a con-

sequence of injury to his chest, an area of traumatic pneumonia and that this pneumonia has been followed by an abscess, or, if not an abscess, by a tuberculous involvement.

Case No. 5.—On September 17, 1914, received a severe contusion on left side of chest, injuring lung and spraining left shoulder joint. At the time of injury or very shortly after it, began spitting blood and continued to do so up to time of examination. On October 6th, X-ray made to eliminate possibility of splinter of rib puncturing pleura. X-ray showed nothing of the sort, but large bronchial glandular masses on both sides of the chest, probably some latent tuberculosis. Was apparently in sound health up to time of injury, employment necessitating much muscular exertion. Until the crushing injury of the chest, the latent tuberculosis (as shown by the X-ray) did not inconvenience him. His injury was such that this latent tuberculosis immediately became active. On October 26th the sputum showed no T. B. The doctor made the note that he could not of course be expected to find T. B. in sputum in the first stage of tuberculosis, as it is not until the second stage develops that the breaking down of the lung tissue takes place. The doctor believes that the injury did not cause the tuberculosis, but it caused the latent T. B. that was not disabling the man, to become active and greatly prolong his disability. Patient ran some temperature most of the time after injury, coughed more than one would expect, and expectorated blood on a good many occasions; also had night sweats two or three times during the period of observation.

Case No. 6, J. L.—Was injured May 7, 1914, by being struck on left chest by repeated blows of a machine. Unconscious for about three minutes. Coughed up blood at the time and for three or four days later. In bed two weeks. Some pain on breathing, but no cough after four days. Tumor on the area struck which crackled on pressure. After two weeks side strapped, tumor disappearing; was allowed to get up, told to go to work as soon as he saw fit. Was seen by doctor only a few times after that and at the end of four weeks removed straps himself. Four or five days later breathing as good as ever, sitting down. Only complained of pain just below left nipple; dyspnea after taking long walks, but on resting this condition was improved. (No coughing.) Took trip to town in automobile at end of four weeks, resulting in increase of pain under the nipple, later at times shooting through to back. Examined July 7th, nothing found but a rapid and somewhat irregular heart. No condition to indicate former injury or deformity of ribs. In other words, there had been probably a traumatic injury to the lung with complete recovery. Pain might have been due to a possible pleurisy, but there was no evidence of this. Nothing special found to explain rapid heart.

Case No. 7.—Man, age 64. While riding on the rear end of an automobile fire patrol, was thrown against the body of the machine, owing to the latter coming to a sudden stop. Struck in pit of stomach and right side of chest. Able to go to fire and remain at work for one month; during this time right side of chest was black and blue. January 31, one month after accident, raised a small clot of blood. February 1, two or three mouthfuls of clear blood. Quit work March 11, on account of pain in chest and abdomen. Seen April 29, complaining of soreness in abdomen and shortness of breath. When he quit work the doctor whom he consulted diagnosed enlarged liver, bronchitis and question as to pneumonia; also believed that there was a fracture of the sternum and had plates taken which he thought bore out diagnosis. Patient had been a fireman for 33 years; during that time had never been obliged to lay off from work. Examination showed a fairly well preserved, wiry man of small frame, presenting, however, very definite signs of cardio-vascular disease that probably had existed long before the accident. There was a markedly enlarged heart, systolic pressure of 280. Urine of low specific gravity, traces of albumen, no casts. Lungs showed no signs of active tuberculosis, though a physician who had examined him some time before had had X-ray plates taken and diagnosed tuberculosis. The X-ray plates which had been taken were examined carefully and showed neither a fracture of the sternum nor any signs that could be interpreted as anything but an old bronchial gland T. B. All the evidence seemed to point that the patient simply had an old, inactive T. B. It was of course quite possible that a T. B. condition might have been aggravated or lighted up by the contusions received with or without the occurrence of a fracture of the sternum. The absence of cough, of sputum, or of tubercle bacilli, the absence of any active signs in the lungs, the absence of fever, absolutely excluded an active T. B. Of course, the future course of the case will have to decide whether or not he had any tuberculous trouble at all or whether the hemorrhage and disability of which patient complained were due to cardio-vascular lesions.

A difficult question has often been presented to the Industrial Accident Commission where patients have been operated on either at the suggestion of the Commission or of insurance companies, because of injuries or accidents sustained in their work, and where as the result of the operation or coincident with it, pneumonia developed—e. g., a patient gets a hernia and submits to operation for its cure. Pneumonia develops perhaps as the result of the anesthetic itself; at other times at a period too long after the operation to permit of its being labeled an "ether" pneumonia. We simply allude to this point to show how hard it is at times to render decisions fair to both patient and to the persons insuring him.

HEART.

Blows on the chest or penetrating wounds of the chest may damage the heart. Fractured ribs may injure the pericardium. At times one sees very few symptoms; the wound heals with the occurrence of chronic pericarditis. On the other hand, at times an effusion of blood occurs so large as to require tapping. At times tears of the heart muscle are so bad as to cause death; in other cases only late symptoms occur.

As with the lungs, heart disease may occur without giving external evidences of injury. For example, infectious material from infected wounds may produce either an endo- or myocarditis. Experiments have shown that blows on the chest of animals produced, without fracture of bone, bloody infiltration of the valves, multiple foci of hemorrhage in the pericardium, endocardium and myocardium. Some of the dogs subjected to the experiments gave symptoms intravitam, others absolutely none. In some dogs, killed soon afterwards, there were found partial reabsorption of blood and formation of connective tissue; in others tears of the endocardium, hemo-pericardium and hemorrhages in the heart muscle with tears of the muscle of the ventricle. In several patients signs of pericarditis developed and later the only symptoms were those of myocardial weakness. There are several cases on record where trauma caused mitral

insufficiency as evidenced by the typical murmur, accentuation of the secondary pulmonic, increased a. c. d., though of course additional anatomical changes could not be excluded. There are also cases of myocardial degeneration which have been traced to trauma or to over-exertion such as lifting. In the latter, the most prominent symptoms have been marked increase in the a. c. d. with palpitation. In many cases after accident one sees nervous hearts, and it is hard to eliminate organic changes, for we know that a prolonged, persistent tachycardia may lead to organic changes.

Case No. 8.—Perfectly well up to March 10, 1914, when, while working on a wooden tower, it tipped over and patient fell with it a distance of 65 feet. Was unconscious for 15 minutes. Spat up several mouthfuls of blood immediately on returning to consciousness and occasionally again during the day and the few days that followed. Was confined to bed five days and was about the hospital for a month. Since that time, whenever he strains himself, spits up a little blood, not over a teaspoonful at a time. This averages about once in two weeks, the last time on Sunday, April 25. Was not told that he had broken any bones and there were no bruised spots following injuries, but he had a very sore chest which continued up to time of examination—i. e., April 29, 1915. Was told that he struck front of chest on a piece of wood when he landed at end of fall. Complains of suffocated feeling at night and sleeps propped up on two or three pillows. Has dyspnea on walking up hill or on slight exertion. Slight loss of weight with occasional night sweats. In view of hemoptysis, of somewhat enlarged area of cardiac dullness and of the presence of extra-systolics, the doctor thinks it quite probable that at the time of the accident there may have been some bony injury with laceration of soft tissues in region of heart; that there may have been and probably are some adhesions, so that the patient probably has some disability due to trouble in this area. There were also slight indications of hyperthyroidism. (No X-rays taken.)

Case No. 9.—In March, 1914, a man, aged 69, in apparently good health, who had an ankylosis of right knee of 50 years' standing, fell down stairs, vaulting the hand-rail on the way and striking the floor after a drop of ten feet. This accident bent the injured knee to a position which it had not assumed for many years. The report gives as a result: sprain of left ankle and bruise of right knee. This condition was treated by a doctor with the usual treatment for such conditions. Patient was discharged March 9th, no symptoms of heart trouble being reported. March 12th, patient had an attack of broken compensation or what might have been angina pectoris, from which he finally died suddenly on April 1st. Post-mortem showed acute dilatation of heart, myocarditis, hydrothorax, hydropericardium.

In this case of course the patient had never had an attack of heart failure, although the condition of the heart was ripe for this circumstance at any time. By good luck no such event had occurred. The shock of injury of March 3d, coupled with his age, could have produced an acute dilatation of the heart; the confinement incident to the injury could have deranged the heart function owing to interference with the man's usual activity. We frequently observe cases where a latent heart lesion is present, and where heart attacks are seemingly precipitated by interference with normal routine. In this case instant death was from heart failure in a man who had a very bad heart, the terminal attack being a sequence to an accident but not the proximate result of an accident. The accident therefore cannot be considered the cause of the death. The accident probably inaugurated processes which ultimately weakened the heart and which resulted in death, but in view of the fact that no symptoms of heart shock developed until nine days afterward, it can not be considered that the accident was the cause of death.

ARTERIES.

We will now consider the traumatic origin of arterial trouble. Early arterio-sclerosis has been known to follow head injuries. Next in importance comes possibly aneurysm, and the rupture of vessel such as the aorta. Traumatic rupture of the aorta may result from blows in this particular region. On the other hand, ruptures may apparently result from over-exertion. These so-called spontaneous ruptures, however, are found to occur usually in aortas already affected by sclerosis, aneurysm or by inflammatory changes, especially of the media, all, of course, sequelae of infectious diseases which have gradually led to lessened resistance of the arterial wall. The rupture may be the indirect result of a chronic nephritis with its tendency to cardiac hypertrophy. It can therefore be readily understood that even slight trauma as a simple fall or an otherwise slight overexertion may lead to a rupture of the aorta. These ruptures also have been known to follow mental excitement. Theoretically, before one can exclude pre-existing disease it is necessary to carry out a thorough microscopic examination of the arterial wall.

Clinical findings of rupture of the aorta are never quite clear enough to permit diagnosis. They closely resemble those of rupture of the valves or those where aneurysm results, and the symptoms of course vary with the location of the tear. The symptoms are only prominent and clear when large hemorrhages occur in the neighboring organs, for example, the pericardium, the pleura or retro-peritoneal space.

It is often hard to say whether the aneurysm is due to trauma or simply aggravated by it, or whether or not the aneurysm itself existed but that pain was absent until the trauma occurred. Many cases occur where aneurysms are found years after trauma and it is hard to prove that they were not really there before and simply ran a latent course. If an X-ray shows a large aneurysm immediately after an injury, it is probable that it existed long before it. This shows the importance of taking an X-Ray of the chest whenever pain in the back or chest is persistent after a chest contusion, in the absence of sufficient visible explanation.

The following case illustrates arterial disease antedating an accident:

Case No. 10.—Age 63 years, in usual good health up to two or three days prior to March 20th when he lifted some heavy caskets weighing from 600 to 700 pounds. During the next two or three days did not feel like doing anything. Friday, March 20th, while again lifting caskets felt something give or tear in head and felt badly remainder of day. At dinner was dizzy and miserable and went to bed immediately after. Saturday morning, contrary to custom, rode to office and sat around office hopelessly all morning. Walked like a drunken man when he went to lunch. After lunch hardly able to get out of the chair and became so ill and

unsteady that he was brought home in machine and had to be lifted into house. At this time could not talk intelligently and in short time right leg became useless and arm practically disabled. Next morning right arm was entirely useless. History would indicate that there had been a slight hemorrhage from effect of overstrain on March 17th and a larger one on 20th, which continued for several hours and resulted in complete hemiplegia in 24 hours. Except for slightly accentuated second aortic nothing could be found from the examination which might have pointed to any condition as contributing cause of disability. The hemiplegia is permanent.

PANCREAS.

Abdominal lesions produced by industrial accidents are more frequently seen by the surgeon than by the internist; nevertheless, questions do arise occasionally that are of great interest to the latter.

Isolated injuries to the pancreas are rare owing to its protected position. There are, however, numerous cases where after the trauma there immediately occur symptoms of pancreatic lesions, at times general shock, pain and distention of upper abdomen, rigidity, vomiting, etc., and in rare cases rapid swelling due to hemorrhage from the pancreas into the omental bursa. As a rule symptoms subside, the patient gets well, but later on shows up with symptoms and signs that warrant the diagnosis of either cyst or pseudo-cyst of the pancreas.

Two cases of pancreatic cyst with histories of previous trauma were seen by the writer several years ago. Others here have probably had similar cases in past years so that no further space will be given to this question.

DIABETES MELLITUS.

Most interesting, however, is the relationship between diabetes and trauma. Alimentary glycosuria occurs most frequently after injuries to the head, regardless of the exact location of the injury; also with injuries to the spine; it has been furthermore noticed after injuries to various parts of the body, for example, fractures, the glycosuria being due probably to a lessened tolerance for carbohydrates. It is usually, particularly in the latter cases, a very mild disturbance and disappears very rapidly. It is certain that alimentary glycosuria occurs much oftener than a real traumatic diabetes. After all, considering what we know of the experimental production of glycosuria by the production of lesions in the central and peripheral nervous system, it does not seem at all astonishing that diabetes should occur after injury. With the head injuries, for example, it is not necessary to assume anatomical changes in the Claude Bernard point, cases having frequently come to autopsy and no such lesion found. Furthermore, we see transitory and at times permanent glycosurias after a general shaking up of the entire body, especially if it has affected the spine itself. These cases are, of course, more difficult to understand than those where diabetes has followed direct injury to the pancreas.

Glycosuria may follow immediately after an injury, the sugar excretion being large and the course of the disease rapid. Here naturally there is no room for doubt as to the connection between the injury and the disease.

The glycosuria may occur or may only be discovered at a later date, but when one finds a case with a slow onset, with a glycosuria discovered quite a time after the injury, all that can be said is that the diabetes is *probably* due to the accident, in that it is hard to *prove* that it was due to the trauma; the injury must furthermore have been to some organ connected with sugar metabolism. The length of time that may have elapsed between the occurrence of the accident and the glycosuria should not be over six months and only in exceptional cases can a longer period be considered probable.

A probable connection between the accident and diabetes can be considered (1) if there is no point to prove the presence of the disease before the accident; (2) if the accident producing the injury was to the central nervous system or if it produced a severe general shakeup or great mental excitement; (3) if the diabetes developed in the first week or month after the accident; (4) if the accident left a traumatic disease of the nervous system, organic or functional. In the latter case, of course, one can allow a longer interval between the injury and the development of symptoms as here we have the disease of the nervous system giving the continuity.

Aggravation of an existing diabetes by trauma does occur. Not only is physical trauma liable to do this but psychic trauma, fear, anxiety, worry, etc. This is an experience that we all have had and about which nothing further need be said.

DIABETES INSIPIDUS.

Diabetes insipidus as the result of trauma is of far greater frequency than diabetes mellitus. Knowing as we do very little in regard to the etiology of diabetes insipidus, it is useless to surmise as to the relationship between trauma and this disease. In nearly all reported cases it has followed injuries to the central nervous system, but there are enough cases where the trauma has been to the region of the kidneys or the back to make this connection a probable one. (As with diabetes mellitus, diabetes insipidus has also occurred after psychic trauma.) The following case is cited as an example of the latter:

Case No. 11.—This patient, a blacksmith, strong, able-bodied, industrious and a hard-working man. Pneumonia 17 years before; no other illness. Had never gotten up at night to urinate; in fact, history so far as previous condition concerned, absolutely normal. July 10th was engaged in setting a tire on a cart wheel that weighed in the neighborhood of 300 lbs. The cart wheel had to be taken down from a platform on which it was lying during the process of the work. While it was being rolled on the ground, patient fell on left side and the wheel fell on top of him, striking him a severe blow in the region of kidneys and on right side. Suffered immediate pain in this region but was able to continue at work all day and remain at work until July 15. Then left work on account of pain in back and weakness. About one week later noticed bright red blood in stools. Thirst became a marked symptom and the urine increased until it had reached several gallons a day. September 29th, was carefully examined and possibility of chronic nephritis, hydronephrosis and hysteria eliminated. Specific gravity of urine 1001

to 1003; reaction acid; never any albumin or sugar, and urea always very small in amount. Patient again seen on November 9; at that time presented signs of slight cardiac impairment. Urine amount had remained about six quarts, and the patient still complained of pain in back. The opinion of the medical referee who went into the case to a far greater extent than this small résumé would indicate, would go to show that the patient had a true diabetes insipidus due to injury.

KIDNEYS.

Kidney diseases following trauma may be grouped as follows:

1. Cases of injury of kidney where the urine findings on the first day are similar to those of acute nephritis, i. e., red corpuscles, various kinds of casts and usually more albumen than is warranted by the presence of blood. In some of these cases subjected to autopsy no inflammatory changes are to be found; only diffuse necrosis or hemorrhages. These cases, if they do not die as the result of other injury, usually get well. The urine clears up in a few days and other signs of nephritis remain absent.

2. More rarely after contusion we get a more lasting albuminuria, i. e., even for years, without other signs of nephritis. The few cases followed cleared up. They were probably due to a circumscribed inflammatory condition.

3. Cases were mentioned in the literature where after trauma in the region of the kidney diffuse nephritis occurred, i. e., besides the urinary findings, edema, or even uremia ensued. The question of relationship is a difficult one to decide as possibly there was a pre-existing, latent chronic nephritis.

4. The course of a pre-existing nephritis might be aggravated by a tear or injuries to vessels so diffuse as to put considerable part of the renal parenchyma out of function, and this naturally is of far greater importance in a kidney already diseased than in one that is normal.

5. It must also be remembered that a great physical shock or a great muscular exertion may have a bad effect on a secondarily hypertrophied heart. Regardless of the part of the body to which the accident occurred, a trauma may, of course, lead to a general infection with a nephritis as a part of the symptom complex, or a long-continued infection may secondarily lead to amyloid disease of the kidney.

In the consideration of the relationship of trauma to chronic neprhitis it is not an easy matter to prove this relationship in most cases but its possibilities must be admitted. At any rate, if the trauma is not the full cause of the nephritis, it certainly is in many cases an exciting factor.

Case No. 12, T. S.—Patient subjected to a great strain, shortly followed by symptoms of pyelitis and orchitis. Evidence that infection pre-existed.

Case No. 13.—Old man, trauma to abdomen, followed by repeated hematurias for a week. Complete recovery.

ARTHRITIS.

In the consideration of rheumatic conditions which are attributed to trauma, we must remember that trauma frequently causes hemorrhagic effusion, the latter being frequently followed by serous ones, or else it causes primary serous ones. Young people affected with this condition usually get well, while in older people this condition may lead to lasting functional impairment. The resultting trouble is frequently way out of proportion to the intensity of the injury. At times the joint condition takes on a progressive course and out of a plain synovitis we get a marked deforming arthritis with involvement of all parts of the joints. This even occurs at times in younger patients though of course here the question of a possible rheumatic predisposition arises.

At times the patient applies for compensation because of a chronic arthritis, a long time after the injury. The relationship is more difficult to prove at this time. It must be remembered that chronic joint conditions are frequently aggravated by an injury. Furthermore, chronic joint conditions develop in old people after trauma not necessarily to the joints themselves, but as a result of disturbances in circulation, as after the use of extension bandages, or simply as the result of long-continued joint fixation.

Case No. 14.—Case 14 is interesting in this respect. Mr. H. P., age 45. At 6:30 a. m. December 30, 1914, was kicked by a mule. Resulted in sprain of left knee and ankle after which both joints began to swell rapidly, especially knee and at noon of that day knee joint was much enlarged. This condition continued without much change in either joint for about three weeks after original accident. About this time the knee joint became very painful without any increased swelling. This continued for about seven days, pain then subsiding. From then on there was gradual improvement, the ankle joint having ceased to trouble him about two months after the date of accident. Applicant upon inquiry states that about twelve years ago he had rheumatism in his right shoulder joint. Annoyed him on and off for about four months but was never incapacitated. About two years ago had similar trouble with left ankle, which laid him up for three months. During this time he does not appear to have been confined to bed. On March 27th, 1915, ankle joint O. K. but there is still definite involvement of the knee. From the history and the known violence of injury there is no question but that the injury was the result of the accident. This is obvious as the local signs were fully developed six hours afterwards. That he had a super-imposed rheumatic attack in the knee joint three weeks after the accident seems probable from the history of the case. But that he would not have suffered from this but for accident which furnished a loc. rest. min. is a reasonable conclusion.

SYPHILIS.

In spite of the frequency of this disease and the part that it is supposed to play in prolonging convalescence after injuries, there is very little known or proven in this regard. A study of the records of the Industrial Accident Commission and of the literature investigated shows that though it is often claimed that fractures do not heal as well in syphilitic patients, this matter is a very difficult one to prove.

Neither is there any proof that trauma, by a general shaking up, or by leading to a general physical weakness, may lead to the breaking out of latent lues at a part distant from that traumatized. In-

juries and operative wounds in the presence of lues are not necessarily and in fact are usually not complicated by the syphilis and run a not at all unfavorable course. Given proper asepsis, all surgical diseases heal readily even in the presence of a recent syphilis. Trauma is of far greater importance in the so-called parasyphilitic diseases. There are many instances recorded where tabes and paresis ran either latent or mild courses, a fall or other injury causing a marked progression.

TUMORS.

The following cases from the records of the Industrial Accident Commission are worthy of mention:

Case No. 15.—Widow, age 35. January 10, 1914, while at work, struck right breast against the corner of a box. Immediately complained of pain. Tumor was said to develop at site of injury and on August 18, 1914, operation was performed and growth removed, the diagnosis at this time being cystic adenoma. Later examination showed the condition had been one of chronic cystic mastitis and that the accident probably called the attention of the patient to the tumor,—that the tumor was a coincidence and not due to the trauma.

Case No. 16.—December 3, 1914, tank exploded and head of the tank hit the patient, causing bursitis of knee, ankle sprain and a penetrating wound in the middle part of thigh. X-ray showed no bone injury. February, 1915, an osteosarcoma of the femur, the result of injury, was diagnosed; 606 was advised with the proviso that if there were no results in ten days, operation and removal of specimen was to take place. Patient refused syphilitic treatment and operation. Finally, March 20, 1915, removal of specimen showed no malignant growth, i. e., no osteosarcoma of the femur, but a large cystic periosteal tumor which was removed. The patient now well.

To decide that a tumor is the result of a trauma (1) a tumor should develop at the site of the injury; (2) the tumor should develop on the remains of an injury, for example, a fistula or an unhealed wound; (3) the intensity of the trauma should be sufficiently great; (4) a continuity of symptoms from the time of the trauma to the occurrence of the tumor should be, if possible, demonstrated; (5) the time between the injury and the occurrence of the growth should not be over two years, though there are exceptions to this rule. (6) On the other hand, the time between the occurrence of the injury and the tumor should not be less than a certain minimum, e. g., a sarcoma three weeks; a cancer six weeks. If one sees a wound edge undergoing sarcomatous degeneration under one's eyes inside of ten days, the condition is not to be denied. If the growth is rapid, it is probable that it existed prior to the injury. (7) The indirect occurrence of a tumor must be rejected, e. g., one cannot admit that a rundown condition predisposes to its occurrence. (8) An aggravation of a tumor may occur after a trauma, e. g., a nevus or a small angioma, or a breast fibroid may grow very rapidly after an injury, though if the tumor be a cancer this cannot be admitted as it would be certain to do so without the accident.

FRACTURE RECORDS; A NATIONAL EFFORT TOWARD STANDARDIZATION.*

By THOMAS W. HUNTINGTON, M. D., F. A. C. S., San Francisco.

Recent legislation, both national and state, providing for industrial insurance and employer's liability, has a distinct and important bearing upon fracture treatment. No other class of injuries presents so many phases which subject the person in charge and the result attained to so sharp criticism. As a consequence, an abrupt and imperative demand for clearly defined and fully recognized standards has been imposed upon all who are, directly or indirectly, responsible for fracture treatment and end results.

It may be truthfully stated that our knowledge of end results, as related to fractures, is an unknown quantity. This admission, though humiliating, is, nevertheless, beyond question, and in no other department of surgery does this condition prevail. Individual statistics, based almost entirely upon fracture status at the termination of treatment—that is, at the time of the patient's discharge—are far from complete or satisfactory. Very rarely have cases been traced beyond this period.

"With few exceptions, surgeons have neglected to perfect their records upon the following essential points, viz: exact description of initial lesion; period of hospital residence; time interval between injury and resumption of work; degree of permanent deformity and loss of function."

As a rule, favorite methods of treatment have found justification when union has taken place and the patient has been discharged; later and most essential details are rarely available. I am of the opinion that the real merit of various methods and policies must await final adjudication, until a very large number of fractures have been observed for a period of from one to three years. This will involve such an outlay of time and effort as will, rarely, be incurred by individuals, and such investigation can only be efficiently carried out by social service organizations which command the time of men specially qualified for critical analysis.

Furthermore, we are confronted by this vital consideration, that in each individual fracture, its mechanism and primary status are widely variable factors as influencing end results, or determining the value of a particular method of treatment. The designation "fracture of the humerus," "forearm," "femur" or "leg" in the tabulation of a series of fractures is vague and indeterminate, in the absence of full details as to the peculiar features of each fracture.

Similar comment applies to the classification "open," "closed," "comminuted" and "joint fracture," and deductions from indiscriminate classification are inherently misleading and of little scientific value.

"All surgeons," says John B. Walker, "must admit the necessity of collecting data for future guidance in giving the best prognosis and treatment. But it is possible to make this material of value *only* by carefully classifying and correctly collating

* Read before the San Francisco County Medical Society, September 7th, 1915.

large numbers of cases, so that we can find the normal average duration of disability which is our best guide for treatment in a given type of case. In our previous attempts to do this, we have become more and more dissatisfied with present statistics, for our judgment tells us that the majority of statistics are incorrect."

Since the foregoing was written, Dr. Harold Brunn, of San Francisco, in a personal communication, makes the following confirmatory comment: "I have attempted to follow your scheme in the analysis in a series of 63 fractures, occurring in the City and County Hospital of San Francisco, and I find this to be almost impossible without giving an erroneous impression of our statistics, for the following reasons:

"First—Histories are frequently incomplete, and essential data are wanting.

"Second—The class of cases we have dealt with are, frequently, old and arthritic, or suffering from a complication of diseases.

"Third—Our patients usually are without means or refuge, and their hospital residence is measured by their ability to perform manual labor, after dismissal."

Dr. Chas. G. Levison, of San Francisco, in a personal communication says: "After going over my fracture histories, I am unable, satisfactorily, to furnish data as to hospital residence, period of convalescence, and degree of impaired function. This is usual in hospitals which have not developed the social service system."

It is an aphorism that nearly every fracture embodies a potential loss of function and deformity. Consequently, it is fundamental that analyses of end results, as related to types of fracture or special methods of treatment must reckon not only with the bone or bones involved, but with the peculiar mechanism of small groups of each type. This involves a study of the following collateral data:

(1) The personal equation of the patient; age, social and physical condition.

(2) The bone lesion, whether single or multiple, relation to joint structures, direction of fracture lines, and co-existing comminutions.

(3) Trauma of soft parts, skin, muscles, blood vessels, and nerve trunks.

(4) The special method used, and in operative cases, the fixation material employed.

Revival of interest in this department of surgery, in recent years, has led to a keen appreciation of the tremendous importance of the subject. Surgeons realize that conventional methods of whatever type do not satisfy the exactions of the patient or the courts. Each step in the development of the subject, has suggested new and interesting problems in the associated sciences, biology, mechanics, economics, and sociology. Each of these interests has challenged consideration, and each has stimulated human endeavor.

Mankind has learned to think in similar terms, and has arrived at a finer sense of proportion. Precision has become the genius of performance, and values are expressed not in vague generalities, but in equations. Indifferent and arbitrary standards are no longer accepted as a yard stick, nor do they serve as a refuge. "Bony union," once the surgeon's shibboleth, in the presence of obvious defects, such as discomfort, lowered efficiency or loss of function, is no longer an achievement. Briefly, clinical and sociological results must be closely correlated." †

In 1914, the American Surgical Association appointed a special "Committee on Fracture Treatment," of which W. L. Estes, of Bethlehem, Pa., was the chairman.

This committee has been continued from year to year and is now earnestly endeavoring to perfect the work entrusted to it. This committee, at the last meeting of the American Surgical Association, recommended a plan whereby exact knowledge of the subject may be obtained from surgeons and hospitals.

From the foregoing statement, it is obvious that only meagre data were, hitherto, available. In furtherance of this undertaking, the committee has formulated—

First: A "Schedule of Fractures" which will be recorded as a classification standard, throughout this country, as follows:

AMERICAN SURGICAL ASSOCIATION.
SCHEDULE OF FRACTURES.

Humerus—
- a. Anatomical neck.
- b. Separated upper ephiphysis (with or without fracture).
- c. Fracture of tuberosity.
- d. Fracture of surgical neck.
- e. Fracture of shaft.
- f. Supracondylar fracture.
- g. Internal condyle; external condyle; capitellum.

Radius—
- a. Head and neck.
- b. Shaft.
- c. Lower end (not Colles's).

Ulna—
- a. Olecranon.
- b. Shaft.
- c. Lower end.

Radius and Ulna—
- a. Shafts of both bones.
- b. Colles's.

Femur—
- a. Neck, through the
- b. Neck, base of the
- c. Trochanteric.
- d. Upper third.
- e. Middle third.
- f. Lower third.
- g. Supracondylar.
- h. Involving knee joint.

Tibia—
- a. Involving knee joint.
- b. Shaft.
- c. Internal malleolus.

Fibula—
- a. Shaft.

Tibia and Fibula—
- a. Shafts.
- b. Pott's.

† "Review of Fracture Literature." Thos. W. Huntington, M. D. Annals of Surgery, September, 1915.

Secondly: An "Inquiry Form for Fractures" which will serve as a record sheet in dealing with all fractures of long bones, as follows:

General Results:	GOOD	MODERATE	BAD
Anatomical			
Functional			

AMERICAN SURGICAL ASSOCIATION

INQUIRY FORM FOR FRACTURES

1. Bone..... 2. Site—Neck....Upper....Middle....Lower 3d....Condyle....Involving joint....
3. Name..... 4. Sex—M....F.... 5. Age..... 6. Occupation.....
7. Time fracture occurred—Date.....Hour..... 8. Hospital entered.....Date.....Hour.....
9. First treatment date.....Hour..... 10. Cause of fracture.....
11. Kind of fracture—Oblique....Transverse....Spiral....Impacted....Comminuted....Simple....Compound.....
12. Was there serious injury to soft parts—Skin—Yes...No.... Muscles—Yes...No... Vessels—Yes....No.... Nerves—Yes...No.....
13. Reduction: How many hours elapsed after accident before reduction?.....
14. Was anatomical reposition of fragments obtained? Yes.....No.....
15. Anesthetics used: Yes....No.....Ether.....Gas.....
16. Fixation: Closed Method.
Position, Hyperflexion..full supination..abduction
Splints .....
Plaster of paris.....
Traction—Bucks..Jones..Hodgen...Bardenheuer...
Steinman .....
Amount of weight used.....
17. Open Method.
Was nonoperative treatment tried first.....
How long after injury was operation performed...
Was open reduction alone performed.....
What form of internal fixation used—Steel Plates.....Wire.....
Nails.....Screws.....Bone transplants.....
Was it later necessary to remove fixation materials.....
18. Shortening at first examination.....cm. When all apparatus removed.....cm. Date.....
When discharged from hospital.....cm. Date..... At last observation.....cm. Date.....
19. X-Ray—Yes...No...First finding on the...day before;...on the...day after reduction. Fragments Displaced—Slightly....Markedly.....
Fair apposition—Yes...No... Anatomical—Yes...No... Overriding.....cm. Rotation—Yes...No.....
At last finding on the...day Overriding...cm. Apposition Fair—Yes...No... Anatomical—Yes...No...
20. How long confined in bed-..... How long in Hospital?.....
21. How long did patient use crutches?..... Cane?.....
22. Results: Final examination made....weeks....months after injury. Union bony....fibrous....Non-union....
23. Disability—Partial....Complete....Estimated by deformity....Shortening....Angulation....Swelling of soft Parts....Pain....Nerve involvement....Interference with joint function....Endurance.....
24. Mortality—Age of patient.....Main cause of death.....
25. Duration of absence from work.....weeks.....months.....
26. Is patient fully able to take his former job?.....
27. Present wage earning capacity compared with former.....
28. Compensation under insurance, legislative act or legal process obtained—Yes.....No.....
Expected—Yes.....No.....

At the close of Dr. Estes's recent report, he makes the following statement: "The first step in the betterment of practice is the study of results achieved by present day methods. An adequate study is impossible without adequate records.

"The committee strongly urges the American Surgical Association to set its seal of approval upon the standard form of record submitted by the committee, and further to petition the American Medical Association to do the same. The committee also urges each member of this Association faithfully to keep these records in his practice and to see that they are kept in the hospitals to which he is attached.

"The Committee further recommends that a copy of the approved form be sent to all corporations within the United States of sufficient importance to have their own relief organizations or medical service or both; to all accident insurance companies to be embodied and incorporated in the papers given to the insured, with the requirement that they be filled at the time of an accident involving fracture; to all hospital boards with the request that these records be made a part of the routine records of fracture patients, pointing out that thus not only are the hospital and its surgeons protected in case of litigation, but that most valuable material is being collected to serve for attaining better results in the treatment of fractures."

As a member of this Committee, there has been entrusted, to me, the task of interesting surgeons, hospitals, corporations, accident insurance companies, and employers' liability commissions, throughout the Pacific Coast, in this subject and earnestly soliciting their co-operation.

The subject will be presented to the California State Medical Society, at its next meeting, and to the various County Societies of California; also, to the Medical Societies of all the Pacific Coast States, and as far as possible, to the County Societies of said states, with an earnest appeal to those bodies to further the efforts of this committee.

The same procedure will be adopted throughout the country by other members of the Committee. In this way, we may hope that, in from two to five years, we shall have an accumulation of evidence which is complete and accurate; from whence deductions which are of tremendous importance may be drawn.

Finally, I recommend that the "Schedule of Fractures" and "Inquiry Form for Fractures" to be designated as authorized by the American Surgical Association, be adopted and made official by this society.

It is expected that these documents will be printed in large numbers by some authorized person or persons, and thereby become available for all those who are interested in the subject.

Discussion.

Dr. Harry M. Sherman, San Francisco: This is a matter of course which must interest me because I too have been treating fractures as long as I have been treating anything, and I am somewhat

in the dark regarding the ultimate results of not a few of the cases.

We cannot very well keep in touch with our patients after they have left the hospital, and a man very rarely follows up his private patients unless something keeps him in touch with the family and individuals. I see old fractures which have been treated by other people as other people, I suppose, see old fractures that have been treated when new by me. I think the chief value in this effort is that it will stimulate accurate history taking, but accurate history taking is something that cannot come immediately. The man who tries to write an accurate history, and goes back to it two or three years later, will find how incomplete it is and disappointing. This will stimulate an effort to be accurate in the taking of records.

There is one record which can be taken without particular accuracy on the part of the surgeon, and that is the X-ray record; and that filed away in the hospital or place for radiograms, is something that never tells a falsehood—so far as it goes. But the interpretation of to-day may not be that of two years ago. Then again, there is the fact that radiograms on glass are fragile and if they are broken the record may be lost; but the record of the lesion, of what was done in its repair, and the immediate result set forth in the history, might be more lasting. However, a fracture, accurately diagnosed first by the radiogram, and then inspected through the open incision, but which results unhappily for the patient in the end, would of course be judged by that result.

It is the follow-up system of the hospitals, when that has become universal and general, which will take off the shoulders of the surgeon (who is always more interested in a new patient than in the one who has left him) the task of learning the ultimate result and classifying it. I think the follow-up system is one of the great steps which is before us, one which has to be taken. We have been trying it in San Francisco at St. Luke's Hospital for a little over a year. The attitude of the men toward it was, of course, a personal one: some were not interested in it; some objected to it; others were interested in a half-hearted way; and a few of us were interested to the extent of trying it out. It was carried out the first year at the expense of the staff—enough to keep a clerk, supply pens, ink, paper and other materials necessary for the filing away of records; postage stamps for sending out letters, and methods of tabulating these when they came in. This second year it is being taken care of by the Hospital. This two years' trial is going to be rather a short one, but already I have learned from it. People that I have thought Simon pure successes are not such; some I was rather chagrined with are perfectly satisfied with what they have. For instance, Saturday afternoon a former patient met me at the Exposition and showed me his wrist (Colles fracture). He has a hand that suits him perfectly, and it is a bad deformity resulting from a Colles fracture. That man, when he gets his letter, will say his wrist has a lump on one side, but he will say also that it is a perfectly good wrist. Technically it can be called an anatomic failure but a functional success.

We have to depend, therefore, upon an unstable system, an erratic system, which will not be purely scientific so long as it depends upon the varying opinion of different and indifferent individuals to estimate the result. The only way of careful analysis would be to have every one of these individuals followed and examined by a surgeon, and that would be a tremendous undertaking, one too great for a surgeon alone to carry through.

The test of this will come, as Dr. Huntington understands, after we have tried it. I shall be very glad to use it in all my own work and I shall urge that it be used at St. Luke's, and we will try it out as well as we can. We will agree, in the first place, not to make any changes, but we may make certain additions, and all that will be submitted to the committee, so that in the end that committee will have, not a broader viewpoint, but a broader range of vision from which to draw their deductions.

That this great step has come in connection with fractures is interesting. If it had not been for the radiogram, we would be treating fractures now as we have been treating them for the past thousand years.

THE USE OF CARBON DIOXID IN DERMATOLOGY.*

By E. D. LOVEJOY, A. B., M. D., Los Angeles.

Refrigeration in the treatment of skin conditions was first tried by Dr. White, of Boston, in 1899, the medium employed by him being liquid air. This has a temperature of —418 F., is a bluish white, clear liquid and instantly freezes all tissue with which it is brought in contact. It undoubtedly was a valuable agent, but not being a commercial product, was very expensive and could not be kept for any length of time. Later, ethyl chloride and liquid carbonic acid spray were tried, but subsequently given up.

Not until Dr. Pusey, of Chicago, introduced carbonic acid in the solid form, or carbon dioxid, as it is now called, did we have a satisfactory agent, one which was easily handled, inexpensive, and at the same time could be kept on hand.

Carbon dioxid is a by-product obtained in the combustion of coke. It is condensed into a liquid form by pumping into cylinders, under pressure varying from 850 to 1000 pounds to the square inch. These cylinders are easily obtained at a slight expense and with ordinary care one tank will serve for anywhere from 50 to 100 treatments, depending on the waste.

The effects of CO_2 on the skin are entirely controlled by the amount of pressure exerted and by the duration of the application. We may produce anything from a most superficial freezing, to one of one-eighth of an inch or more in depth. Much less pressure is, of course, to be exerted over bony prominences than over soft tissue.

Pathologically, there occurs a thrombosis of the vessels of the frozen area, also direct injury to the tissues by the freezing and thawing, as well as a marked exudation of fluid and cells, resulting in an absorption of the inflammatory products.

Clinically, we observe a depressed, snowy white area, solid to the touch, exactly corresponding in shape, with the carbon dioxid snow. In a minute or so, this disappears, a red edematous, slightly elevated area taking the place which may or may not go on to blister formation. Gradually the fluid is absorbed, a crust forms which in about a week or ten days, comes off, leaving a smooth, soft, whiteish area as a result. Certainly the cosmetic result cannot be improved upon.

As regards the technic of the individual case, it is much harder to lay down any definite rules. An ordinary application lasts from 20 to 60 seconds, while the pressure exerted cannot well be

* Read before Santa Monica Branch of L. A. County Medical Society, July 19, 1915.

measured. Still it is always possible to make a second application over the same area, after the crust has been shed, if the first did not accomplish all the results we had hoped for.

Pain caused by the treatment is slight, owing to the anesthetic effect of the cold. Babies, of course, cry lustily, but the average adult seldom complains unless to tell you it hurns, which demonstrates the interesting physiological fact that extremes of heat and cold are but poorly differentiated. The temperature of CO_2 snow is about —110 F., or a little less, depending on the hardness of the piece.

The after treatment of these cases, is little or nothing. The blister is left to desiccate. We, however, generally employ a saturated solution of boric acid, either used as a lotion if the part is exposed, or as a wet dressing if there is friction or danger of infection. The latter, however, rarely occurs, owing to the thrombosis and demarcation produced by the freezing, but it may occur after the crust formation, in which case the crust should be removed and the lesion healed as any other infection. Even then, the infected area remains very superficial.

The technic of drawing off the CO_2 is very simple, although for those of inventive genius most elaborate apparatus may be constructed. We have tried many methods, but have given up all in favor of a simple chamois. The method we now use consists of a small piece of wire gauze covered with chamois; this is placed in a cylindrical position around the tank valve. Over this is wrapped several layers of another chamois and the whole held in place by a two-inch roller bandage. The tank is then placed in a horizontal position, the outlet being somewhat lower, in order that the liquid and not the gaseous CO_2 may be obtained. In turning on the valve, it is well to turn on and off several times rapidly at first, in order to freeze the inner part of the chamois, then turn on full, until the central space left in the wrapper is filled with the solid CO_2. We now have a solid tube-like mass of CO_2 which may be shaped down by a knife, to any desired size, to fit the lesion in question.

As to the various dermatologic conditions treated by this method, Bernstein, in great enthusiasm, names over 30, but it is difficult to agree with him as to the efficiency in all. The use, of course, is narrowed down to conditions more or less local in character, where a destructive agent is called for, and especially those conditions where cosmetic results must be considered in our choice of treatment. This brings us down to epitheliomata—especially those of the basal type—all forms of nevus, angioma, tuberculosis of the skin, verruca—especially the plantar variety—seborrheic keratosis, the so-called precarcinomatous keratosis, as well as gunpowder stains and tattoo marks in selected cases. In other words, the group includes many conditions in which we were previously at a loss for suitable methods of treatment, or in which our methods sometimes produced more disfiguring results than the original condition.

In treating cancer of any type, the question of metastasis immediately arises. Fortunately, however, the majority of facial epitheliomata are of the basal cell type and according to Hazen [1] of Washington, and other observers as Krompecher [2] of Jena, and Bloodgood,[3] do *not* metastasize.

The basal cell cancers most frequently occur on the face, the eyelids, nasolabial folds, and neck, while 4% of lip cancers may be classed in the same category. These cancers may be recognized clinically, by the smooth base, the long history without deep destruction, the rolled edge and often a certain amount of attempted healing, as evinced by the beginning scarring. Thus we are fortunate in being able to use this method of destruction in locations where surgery would be difficult and often disfiguring, as in small epitheliomata of the lids—especially the inner and outer canthus of the eye—lesions on the nose, ears, etc.

In the various forms of nevi or birthmarks, CO_2 has almost the entire field to itself, the best results being obtained from the pigmented and elevated varieties, less being accomplished in the port wine stain, due entirely to the size of the blood vessels in question and the difficulty of getting an even result; in widespread areas the results are apt to be blotchy.

Tuberculosis, in the form of tuberculous verrucosa cutis or wart form, may be destroyed by freezing; also good results have been obtained in lupus erythematosus—if this is a tubercular condition.

Verruca or warts, those of large size, not yielding to simpler remedies, may be removed by this means—especially the large, painful plantar warts.

In seborrheic keratosis, we are dealing again with epithelioma in its early form and so little more need be said, except that in these cases degenerative changes have not yet occurred and the question of metastasis, therefore does not have to be considered.

The removal of foreign bodies in the skin, as gunpowder or tattooing, depends on the depth at which they are situated, as in order to get any result, the freezing must be sufficiently deep to carry up the object to be removed, in the resulting vesicle.

And now in closing, a brief summary of a few cases may be of interest:

Case I. Mr. J. D., referred to me Nov. 3d. In middle of left cheek, just below molar prominence, the patient had an ulcerated area, size of 25-cent piece. The lesion had been present three years. Various treatments had been tried, but had at best only resulted in healing of edges. The ulcer was smooth, edges irregular, very superficial, and infected.

The lesion was frozen Nov. 13, for 25 seconds, moderate pressure; for three days there was serous oozing, but Nov. 17 a heavy crust formed. This was removed on the 20th, as pus formed underneath. Nov. 24, it was again allowed to crust, this time without pus. Dec. 12, two crusts had been formed and shed, the underlying skin was smooth, pinkish, and slightly depressed. Mar. 25, skin at site of lesion slightly lighter than surrounding tissue; depression only visible at an angle.

Case II. Referred to me by Dr. Mansur. Patient had epithelioma of upper left eyelid, surrounding the puncta. Three treatments, Nov. 17, Dec. 8, and Jan. 4, removed all traces, leaving the puncta intact and still patulous.

Case III. Referred by Dr. Macleish. Small epithelioma in middle of lower lid, situated on top of a cyst. Two treatments, 20 seconds, light pressure, destroyed the growth, but the cyst remained—though apparently beginning to absorb.

Case IV. Plantar wart in man of 25 years. Two large, painful warts were present on examination, one at base of second metatarsal and a second, larger one, on heel in direct line from the first. Had been treated by a chiropodist for five months, with increase in size of lesions and infection resulting. They were both frozen at one treatment, for about 60 seconds, under heavy pressure. Wet boracic acid compresses and elevation of foot were employed for the infection. The smaller lesion healed and crust was shed in 14 days, the larger in 21 days, leaving soft, healthy skin at site of lesions.

Case V. Vascular angioma in baby, aged 11 months. At birth, lesion appeared as reddish spot; at two months of age, grew rapidly. On examination, a lesion was found on abdomen, just below area of spleen, markedly elevated, with uneven papillomatous surface, measuring two by one inches, oval in general outline. The flatter half only of the lesion was frozen 60 seconds, fair pressure. Two days later, the crust was beginning to form and some serous oozing was present, but no infection. A protective dressing was used, under a binder. The crust was shed ten days after freezing. The remainder of lesion was frozen two weeks later, the half first treated having entirely disappeared, except for small patch at one edge.

References.

1. Hazen. Jour. A. M. A., Mar. 1915.
2. Krompecher. Der Basalzellen Krebs, Jena, Fischer, 1903.
3. Bloodgood. Progr. Med., December, 1904, 136.

THE RELATION OF CERTAIN URINARY FINDINGS TO PROGNOSIS ON PULMONARY TUBERCULOSIS.*

By J. C. CUMMINGS, M.D., Sacramento, Cal.

Definite rules for arriving at a correct prognosis in pulmonary tuberculosis are still lacking. Laboratory methods, so valuable in diagnosis, have hitherto been more or less useless as aids to prognostication. Some eight months ago articles by Weiss,[1] Knock, Heflebower,[2] Gwender, and Schaffle,[3] discussing the prognostic value of Ehrlich's diazo reaction and the so-called urochromogen test with potassium permanganate in the urine of tuberculous subjects came to my attention. Weiss,[1] refers to his earlier writings on this subject dating back to 1906 at which time he observed that death invariably followed the persistent presence of the diazo reaction in the urine of tuberculous subjects.

Early in his observations, Weiss was puzzled by the occasional absence of the diazo reaction in obviously advanced cases and its frequent disappearance just before death. This led him to suspect that the unknown substance upon which the diazo reaction depends was derived from an antecedent which does not give a positive reaction. Upon adding a few drops of 1/1000 solution of potassium permanganate to positive specimens and the diazo reagent combined, he noted that the characteristic red of the diazo reaction became brown; also, when the permanganate solution alone was added to positive specimens a canary yellow color appeared. In addition, the last reaction occurred in specimens which had become negative to the diazo but never appeared in normal urine.

He identified the yellow body as urochrome and felt that by the addition of permanganate he oxidized its antecedent or chromogen. This chromogen does not give a diazo reaction. He therefore called this antecedent substance urochromogen. Thus, the urochromogen test should be positive when the diazo is positive, and by being positive when the diazo is negative, should show the presence of the antecedent of the substance on which both tests depend. Weiss attributes the presence of urochromogen to disintegration of tissue with excretion of incompletely oxidized material in toxic patients of low vitality.

Schaffle[3] in January 1914 began to use the diazo and urochromogen tests at the Pennsylvania State Tuberculosis Dispensary. It occurred to him that the low percentage of positive reactions was due to the fact that all of the subjects were ambulant. Further study of specimens from a large number of bed-ridden patients showed positive reactions to be much more numerous. The significant feature which he dwelt upon is the difference in mortality percentage between the positive and negative cases, and particularly the high death rate among those with a negative diazo and a positive urochromogen reaction.

The pavilion for tuberculous patients at the Sacramento County Hospital has an average of from 20 to 30 inmates, nearly all of whom have advanced lesions. This group seemed to offer a good opportunity for checking up the urochromogen and diazo tests clinically and not infrequently pathologically as well. During my service upon the medical side I had occasion to examine 100 patients. At the suggestion of Dr. Gundrum I made notes covering the following points: Occupation duration, extent of involvement, appetite, nourishment, color of mucous membranes, temperature, cough, sputum, complications, clinical prognosis, (made from the physical examination, etc.), potassium permanganate or urochromogen test, diazo reaction, and finally deaths during the six months' period.

In making the so-called urochromogen test the technic of Weiss was used. This requires a small amount of fresh urine diluted with three parts of water, the mixture is thoroughly shaken up and divided into two equal portions in test tubes. To one of these portions three drops of potassium permanganate solution is added, the other tube being used as a control. Many specimens were turbid and of various shades of amber, but the turbidity and original color seemed to have little effect upon the reaction. I recognized as a positive only a distinctly canary yellow which disappeared rather slowly upon standing. A diazo was done upon each specimen.

In 100 successive admissions of patients suffering from pulmonary tuberculosis only 14 could be given a favorable clinical prognosis. In no case considered as "favorable" from a clinical standpoint did the so-called urochromogen reaction appear in the urine. In seven of 14 cases (50%)

* Read before the Sacramento Society for Medical Improvement, June 15, 1915.

No. Cases	Occupation	Duration (years)	Mod.) INVOLVT. Adven.)	Appetite	Nourishment	Mucous Membranes	Temp. (4 P.M.)	Cough	Sputum	Complications	Prognosis Clinical	Kahn 04	Diazo	Living	Dead
1	Laborer	2 1/2	#	0	Poor	Pale	99-4	#	#	0	Unfavorable	#	0		
2	Laborer	1 1/2	#	#	""	""	99-5	#	#	0	" "	#	#		#
3	Laborer	3	#	#	""	""	100	#	#	Larynx	" "	#	#	#	
4	Laborer	2	#	#	Fair	""	97	0	#	0	" "	0	#		
5	Laborer	3/4	#	0	Poor	""	99-4	#	#	0	" "	#	#		#
6	Painter	1/2	#	0	""	""	102	#	#	0	" "	0	0	#	
7	Laborer	7	#	#	""	""	98-2	#	#	0	" "	0	0	#	
8	Laborer	2	#	#	""	Fair	99-2	#	0	TBC Kidney	" "	#	#	#	
9	Clerk	1 1/2	#	#	Fair	""	99	#	#	0	Favorable	0	0	#	
10	Laborer	5	#	#	""	""	99-2	#	#	0	" "	0	0	#	
11	Laborer	3	#	#	""	""	98	#	#	0	" "	0	0	#	
12	Laborer	7	#	0	Poor	Pale	99-2	#	0	Larynx	Unfavorable	#	#	#	
13	Laborer	2	#	0	""	""	98	#	#	0	" "	#	#	#	
14	Laborer	1 1/2	#	#	""	""	99	#	0	0	" "	0	0	#	
15	Laborer	1	#	#	""	""	100	#	0	0	Favorable	0	#	#	
16	Clerk	2	#	#	Fair	Fair	99-4	#	#	0	Unfavorable	#	#	#	
17	Laborer	8	#	0	Poor	Pale	98	#	#	0	" "	0	0	#	
18	Clerk	1	#	#	""	""	97	#	#	0	" "	0	#		#
19	Laborer	2	#	0	""	""	103	#	#	Tabies Dorsalis	" "	#	#		#
20	Laborer	1	#	0	""	""	101	#	#	0	" "	#	#		#
21	Laborer	1/12	#	#	""	""	99	#	0	Aortic Stenosis	" "	0	0	#	
22	Laborer	1/2	#	#	Fair	Fair	98	#	0	0	Favorable	0	#	#	
23	Housewife	2	#	#	""	""	98-4	#	#	0	" "	0	#	#	
24	Laborer	3	#	#	""	""	99	0	#	0	" "	0	#		#
25	Laborer	3	#	0	Poor	Pale	102	#	0	Pneumonia	Unfavorable	0	#	#	
26	Laborer	2	#	0	""	Fair	97	#	0	0	Favorable	0	0		#
27	Miner	5	#	0	""	Pale	100	#	0	Pneumonia	Unfavorable	0	#	#	
28	Engineer	3	#	0	Fair	Fair	97	0	#	Aneurism	" "	0	#	#	
29	Laborer	20	#	0	Poor	Pale	102	#	#	"	" "	0	#		#
30	Laborer	3	#	0	""	""	100	#	0	Larynx	" "	0	#	#	
31	Laborer	1/3	#	0	""	""	100	#	#	0	" "	0	0	#	
32	Laborer	1/2	#	#	""	""	98	#	0	0	" "	0	#	#	
33	Carpenter	3/4	#	#	Fair	Fair	97	0	#	0	Favorable	0	#	#	
34	Cook	1	#	0	Poor	Pale	102	#	#	0	Unfavorable	#	#		#
35	Waiter	2	#	0	""	""	103	#	0	0	" "	#	#	#	
36	Laborer	1	#	#	Fair	Fair	99-2	0	0	Larynx	" "	0	0	#	
37	Laborer	1/2	#	0	Poor	Pale	99-4	#	0	Pott's Diease	" "	0	#	#	
38	Laborer	1/2	#	#	Fair	Fair	98	#	0	0	Favorable	0	0		#
39	Laborer	2	#	0	Poor	Pale	99	#	0	0	Unfavorable	0	#	#	
40	Laborer	1	#	0	""	""	100	#	0	Larynx	" "	0	#	#	
41	Laborer	3	#	#	Poor	Pale	104	#	#	0	Unfavorable	0	#	#	
42	" "	5	#	0	""	""	99	#	#	0	" "	0	#	#	
43	" "	6	#	#	Fair	""	97-4	#	0	0	Favorable	0	#	#	
44	" "	2	#	0	Poor	""	100-6	#	0	0	Unfavorable	0	#	#	
45	" "	3	#	#	Fair	Fair	102	0	#	Enteritis	" "	#	#	#	
46	" "	10	#	0	Poor	Pale	99-2	0	0	Larynx	" "	#	#		#
47	Painter	1	#	#	""	""	101-4	#	#	Pleuriey	" "	#	#	#	
48	Laborer	3	#	0	""	""	98	0	0	0	" "	#	#	#	
49	" "	1	#	0	""	""	102	#	0	Peritonitis	" "	#	#		#
50	" "	1/2	#	#	""	""	97-6	#	#	0	Favorable	0	#	#	
51	" "	1/2	#	0	""	""	98	#	0	0	Unfavorable	0	#	#	
52	" "	2	#	#	""	""	103	0	0	Hydro-Pneumonia	" "	0	0	#	
53	" "	1/2	#	#	Fair	Fair	99-4	#	0	Larynx	" "	0	0	#	
54	" "	1	#	0	Poor	Pale	101	#	#	0	" "	0	#	#	
55	" "	1/2	#	#	""	""	99	#	0	0	" "	0	#	#	
56	" "	3	#	#	""	""	102	#	0	0	" "	0	#	#	
57	" "	2/3	#	0	""	""	97-6	#	0	0	" "	0	#	#	
58	" "	3	#	#	""	""	99	#	#	Bronchitis	" "	0	#	#	
59	" "	1	#	#	""	""	101	#	0	Pneumonia	" "	0	#	#	
60	" "	3	#	#	""	""	98-4	#	0	0	" "	0	#	#	
61	" "	3	#	#	""	""	99-5	#	0	0	" "	0	#	#	
62	" "	4	#	#	Fair	Fair	97-4	#	0	0	" "	0	#	#	
63	" "	1/2	#	0	Poor	Pale	99-6	#	#	0	" "	0	#	#	
64	" "	8	#	#	""	""	98-8	0	#	0	" "	0	#	#	
65	" "	3	#	0	""	""	99	#	#	0	" "	#	#	#	
66	Housewife	2	#	0	""	""	99-4	#	#	Pleurisy	" "	0	#	#	
67	" "	3	#	0	""	""	98	#	0	Larynx	" "	0	#	#	
68	" "	3	#	#	Fair	Fair	97	#	0	0	" "	0	#	#	
69	Laborer	1/2	#	#	""	""	98-8	0	0	0	Favorable	0	0	#	
70	" "	1	#	0	""	Pale	99-2	#	#	0	Unfavorable	#	0	#	
71	" "	3	#	0	Poor	""	97-4	#	#	0	" "	0	#	#	
72	" "	3	#	#	""	""	99-4	#	0	0	" "	#	#	#	
73	" "	1	#	0	""	""	98-6	0	0	0	" "	#	#	#	
74	" "	2	#	#	""	""	101	#	0	0	" "	#	#	#	
75	" "	1/2	#	0	""	""	99-2	#	0	0	" "	#	#	#	
76	" "	1	#	#	""	""	97-4	#	#	0	" "	#	0	#	
77	" "	2	#	#	Fair	Fair	99	0	0	0	" "	#	#	#	
78	" "	1/2	#	0	Poor	Pale	100	#	0	0	" "	#	0	#	
79	" "	1	#	#	""	""	97	#	0	0	" "	#	0	#	
80	" "	4	#	0	""	""	102	0	#	0	" "	0	0	#	
81	" "	5	#	#	""	""	99-2	#	0	0	" "	0	#	#	
82	" "	1 1/2	#	0	Fair	Pale	98	#	0	0	" "	0	#	#	
83	" "	1/2	#	0	""	""	97-8	#	0	0	" "	0	#	#	
84	" "	2	#	0	Poor	""	99-2	#	#	0	" "	#	0	#	
85	" "	4	#	#	""	""	100	#	0	0		#	#		#

No. Cases	Occupation	Duration (years)	Incipient Mod.	Incipient Advan.	Appetite	Nourishment	Mucous Membranes	Temp. (4 P.M.)	Cough	Sputum	Complications	Prognosis	Kan 04	Diazo	Live	Dead
86	Laborer	2/3		#	0	Poor	Pale	99	#	#	Larynx	Unfavorable	#	#	#	
87	Cook	2		#	0	"	"	101	#	#	0	" "	#	#	#	
88	Laborer	3/4	#		#	"	"	102	#	0	0	" "	#	#	#	
89	" "	3		#	0	"	"	98	#	0	0	" "	#	#	#	
90	" "	1		#	0	"	"	97	#	0	Bronchial Asthma	" "	#	0	#	
91	Waiter	1/2	#		0	"	Fair	92-2	0	0	0	" "	0	#	#	
92	Laborer	1 1/2		#	#	"	Pale	97-6	#	#	0	" "	#	0	#	
93	" "	1/2	#		0	"	"	98-8	0	0	0	" "	0	#		#
94	" "	4		#	#	Fair	Fair	99	#	#	Larynx	" "	#	0		#
95	" "	2		#	0	Poor	Pale	99-6	#	#	0	" "	#	0		#
96	Cook	1 1/2		#	0	"	"	98-4	#	0	0	" "	#	#	#	
97	Laborer	1		#	#	"	"	97-4	#	0	Peritonitis	" "	#	0	#	
98	" "	1/2	#		0	"	Fair	98	#	0	0	" "	0	#	#	
99	" "	3/4		#	#	"	"	99-2	0	#	0	" "	#	#	#	
100	" "	2		#	0	"	Pale	97-4	#	#	Nephritis	" "	#	0	#	

clinically considered "favorable" a positive diazo reaction was obtained. In 39 of 86 (45%) clinically unfavorable cases the urochromogen test was positive while in 53 (61%) the diazo test was positive. Seventeen of 100 patients died in six months. Of these 17, 11 (65%) showed a positive urochromogen, and 13 (76%) a positive diazo while 10 (59%) showed both. Of 17 patients showing a positive urochromogen test with a negative diazo (a combination considered especially ill-omened by Weiss) none have died to date. Of 39 patients having a negative urochromogen and a positive diazo, five have died. The results are more compactly shown in the accompanying table.

CONCLUSIONS.

(1) The urochromogen and diazo reactions appear in the urine of a majority of patients in a late stage of pulmonary tuberculosis.

(2) They do not appear until long after a correctly unfavorable prognosis is possible by a careful clinical examination.

References.

1. Weiss Journ. Am. Med. Ass'n., Nov. 22, 1913, p. 1943.
2. Heflebower. Am. Journ. Med. Sc., 1912, p. 221.
3. Schaffle. Journ. Am. Med. Ass'n., Oct. 10, 1914, p. 1294.

CONTRIBUTION TO INFECTION; ITS PREVENTION AND TREATMENT. RESULTS IN 500 TRAUMATIC CASES.

By CARLETON DEDERER, A. B., M. D., Los Angeles.

To prevent and cure infection, its habits should be observed, recorded and studied. In studying the records of my last 500 traumatic cases I observed that the first habit of infection was to cause tenderness and congestion.

In some of the leading text-books on surgery the term inflammation is used almost synonymously at times with infection. There is a fine distinction between the two. As a general rule both are caused by protein substances. In infection, however, there is the presence of prosperously growing microorganisms at the site of the lesion, but in inflammation there may or may not be microorganisms present in the lesion. Inflammation frequently follows where tissues have had their resistance lowered by fatigue, trauma or chemical action.

For example, there were 50 cases of joint injury without open wounds. There was no case of infection, although some of the patients who had neglected their sprains and contusions of joints developed refractory inflammation. Also in eight cases of new work myositis and tenosynovitis of the forearm from fatigue, there was no case of infection.

In 400 [1] cases of open wounds it was found to be a simple matter to prevent infection when the patient was given treatment early. Early means within six hours for lacerated wounds and within three hours for puncture wounds. Twenty-eight per cent. of the 400 cases showed evidences of infection when they first came under treatment. Of the remaining 284, primary infection developed in less than one per cent. Less than one per cent. developed secondary infection following the patient's interference with the dressing or wound, such as the removing of the stitches by himself.

Although iodine is the best universal preventive of infection in wounds, I have found that it delays healing somewhat, that its effect is too transitory and that it causes extreme sensory nerve stimulation. Compared with certain silver preparations, in cases of equal magnitude, for instance, when fresh 50 per cent. argyrol was applied at the time of first aid, the results were much in favor of the latter preparation. With argyrol the period of treatment was 30 per cent. less than with iodine; the application was painless and the argyrol remained at the site of the wound for about 24 hours.

If wounds contain foreign material they should be treated as if infected from the start.

In 75 cases of puncture wound 23 per cent. were already infected when first coming under treatment. First treatment had been delayed for an average period of five days. In order to prevent infection it was necessary to inject tincture of iodine under pressure. This was accomplished

with an all glass syringe using the ordinary hypodermic needle, but with the shaft removed, giving a blunt point which could be pushed firmly into the opening of the wound. Infection developed in one of these cases where injection was neglected and the wound swabbed with iodine. In puncture wounds from stepping on a nail, healing took more than twice as long when 95 per cent. carbolic acid was used as it did when iodine was introduced into the wound.

Of three cases of wounds coming to me, having been treated elsewhere with bichloride of mercury, all were infected. The bichloride delayed recovery. The trauma from too tight stitches favored infection in one of these cases.

To prevent infection in cases of compound fracture of the jaw and lacerations of the mouth, rinsing the mouth every 15 minutes with boric acid solution proved effectual.

TREATMENT OF INFECTED WOUNDS.

As soon as congestion appears a fight is begun. It is then a matter of the enemy's ability to become entrenched.

Aside from specific and constitutional treatment, boric acid solution, so highly recommended by Flexner,[2] has proven efficacious in most cases of acute infection, but where it failed it was because the disease was not one to be cured by phagocytosis like staphylococcus infections, but by bacteriolysis as in streptococcus infections, in which case methods were used which temporarily ignored the phagocytes. Chemicals were resorted to which not only inhibited the growth of bacteria but changed their physical status the better to fit them for attack by the body substances. This was done by using wet dressings of alcohol alternating with several applications of hot boric acid solution, preferably immersing the part.

In acute infections in order to give the body more time to obtain ammunition, winter is brought about to delay all local fighting. This is done by the application of ice for one hour outside the dressing. Winter then has prevented the enemy from developing its fighting strength. After this, summer is brought about by the application of heat for one hour, thereby starting the war again, but this time to the advantage of the host, for while all the enemy's operations have been halted by winter, the host has been replenishing all of his materials for warfare at a distant and more agreeable clime. A few seasons of this will win the contest and give the host supremacy.

I have observed benefit also from giving five grains of aspirin three times a day in some of these infections.

Little can be added to the present operative methods of curing infection. Where it is possible in acute cases requiring incision, it is advisable to have one incision transverse to the channels of absorption. In chronic cases excision, when possible, is excellent. One case of skin infection, with the micrococcus catarrhalis that had been growing worse for seven weeks, was thus cured in 17 days.

References.

1. For clearness round numbers are used where the error is under one per cent.
2. Flexner: Infections, Journal A. M. A., 1913, lxi, 1876.

THE SCOPE AND LIMITATIONS OF A PSYCHIATRIC CLINIC IN SAN FRANCISCO.

By EVA CHARLOTTE REID, M. D.,

After-Care Physician for California State Hospitals; Assistant in Psychiatry, University of California Medical School; Chief of Psychiatric Clinic, University Hospital, San Francisco, California.

"Who would not give a trifle to prevent
What he would give ten thousand worlds to cure."
—De Young.

Of no disease can this be more truly said than insanity. The task of the general practitioner or surgeon who must acquaint the friends and relatives of his patient with the fact that death is inevitable is pleasant compared with that of the psychiatrist who must pronounce for his patient a "living death." The United States is at the present time spending more than thirty-three million dollars yearly for the cure and care of patients afflicted with mental disease, and comparatively nothing for prevention. And yet the perusal of the report of almost any state hospital will show that in about fifty per cent. of the cases admitted the mental disorder is due directly to definite causes which are clearly preventable. From five to ten per cent. more are functional disorders which probably could have been prevented by early treatment.

The neglect of the subject of the prevention of mental disease is due largely to the fact that instruction in psychiatry in the average medical school is still hopelessly inadequate. Consequently the general practitioner is entirely unacquainted with the early manifestations of mental disease, and if he does recognize them, is at a loss how to deal with them. The statistics of the admissions to institutions for the insane from Greater New York taken for one year recently showed that one-third of the cases had been insane for more than a year prior to admission. These facts would indicate that for the psychiatric clinic there is a wide field of usefulness. This has been proven in Boston, New York and Baltimore, where such clinics have been established sufficiently long to demonstrate their importance.

In August, 1914, the after-care work for the four northern state hospitals of California was established and a limited amount of time was given to the examination of new cases. Although no effort was made to advertise the fact that such a clinic was being conducted, one hundred cases have been presented for mental examination and advice during the past ten months. These patients were referred to the clinic by general practitioners, social workers and after-care patients. Two came from the city prison. The majority of the cases were referred by other clinics at the University Hospital to the nerve clinic, where neurological, and if indicated, serological and cytological examinations were made.

The cases examined were, with a few exceptions, very early cases. Some of them had been treated by many hospitals without having their mental disorder even suspected. One man who was very insane had been treated in four different hospitals.

Of the hundred cases examined the following diagnoses were made:

Constitutional Inferiority		
Morons	11	
Imbeciles	2	
	—	13
Constitutional Psychopathy		5
Psychoneurosis		5
Psychasthenia		1
Neurasthenia		1
Hysteria		7
Traumatic Hysteria		1
Psychogenic Depression		2
Manic-Depressive Depression		2
Involutional Melancholia		1
Dementia Praecox		
Paranoid form	6	
Catatonic form	4	
Hebephrenic form	6	
	—	16
Paranoid states		3
Chorea		1
Epilepsy		4
Epilepsy with Dementia		4
Epilepsy with Feeblemindedness		3
Infective Exhaustive Psychosis		3
Alcoholic Dementia		1
Arteriosclerotic Dementia		3
General Paresis		9
Cerebral Syphilis		3
Psychosis Associated with Organic Brain Disease		5
Malingering		1
Undiagnosed		8

The following brief summaries will serve to show the type of cases that come up in such a clinic:

Case No. 1. A. A. Female. English. Age 28. Housewife. Family history negative. Patient was nervous and high-strung and suffered a great deal from toothache and neuralgia as a child. Was subject to fainting attacks from fifteen to eighteen years of age. She received a good education and worked for six years as a bookkeeper in Manchester, England. She was married at 21, and at 22 her first child was born. When the baby was 5 weeks old the patient had a severe attack of influenza and neuralgia. When she recovered and took complete charge of her baby she found it a great trouble. One day, after climbing the stairs with the baby in her arms, she had a sudden impulse to drop the child and kill it. She was horrified at the thought but it kept recurring. Later the impulse to end her own life came to her. For weeks she never saw an automobile or street car without the impulse to throw herself in front of it. She finally rid herself of the obsession by going to visit a sister and taking up new interests.

In 1913 she came to San Francisco with her husband and two children. She found it difficult to make friends here and kept almost entirely to herself. In February 1915 she suffered from toothache and had several teeth extracted. Following this she had an attack of influenza. Suddenly the impulse to suicide returned. One night she saw a steel knife lying on the table and she became obsessed with the idea of killing herself with it. All night she lay awake fighting the impulse to kill herself. Later the idea of killing her children came to her. This impulse grew so strong that she became afraid to handle the knives. She was alone practically all day and had brooded more and more over her abnormal impulses. Formerly she had been interested in the newspapers, but after the outbreak of the European conflict the papers became so filled with the horrors of the war in which so many of her countrymen were engaged, that she could not bear to look at them. Finally, she concluded she was going insane and came to the clinic for help. After two months' treatment of psychanalysis, suggestion and tonics she is practically normal.

Case No. 2. M. L. Female. Age 48. Irish. Housewife. This case was similar to the foregoing, but the fact that the compulsion had existed for 18 years made the prognosis less hopeful. Family and early history was negative. Patient was brought up a strict Catholic. When 30 years of age, one day while praying in church she had an impulse to use profane and obscene language. For 18 years she had fought this impulse, which appeared at the most inopportune times—when she was conversing with a friend, when she was in the midst of her devotions, at funerals, weddings, etc. When she was alone she whispered the profane and obscene words. When she was in company she was always able to refrain from expressing these vile thoughts, but she grew afraid that the time would come when she would not be able to do so. In all this time she had never mentioned this obsession to any one. Finally the fear that she was going insane drove her to seek assistance at the clinic. The long existence of the obsession and the reticence of the patient made an analysis of the complex which caused the condition impossible. She has steadily improved, although she has not entirely recovered.

Case No. 3. J. B. Male. Canadian. Age 52. Laborer. Family history negative as regards nervous and mental disease. Patient gave a history of having had measles, pertussis, pleurisy, consumption, rheumatism, tonsillitis, malaria, abscess of the hip, chronic stomach trouble, sunstroke and head injury. On Feb. 6, 1915, in a cheap restaurant in San Francisco he ate a pretzel and drank a cup of coffee. He stated the sugar on the pretzel was ten times sweeter than ordinary sugar. The coffee was contaminated by the copper vessel in which it had been prepared, and the poison spread through his system and circulated in his blood. About this time he received a letter stating that his sister had died of cancer of the stomach. He concluded he was suffering from the same complaint. He likewise read in the newspapers of a tailor in Palo Alto who fasted 40 days to cure himself of stomach trouble. The patient decided he could cure himself in a similar manner and fixed 33 days as the time necessary to effect a cure. He fasted for 17 days and at the end of that time fainted on the street. He was taken to a hospital where he informed the physicians that he had cancer of the stomach, and he intended to cure himself by fasting. He was examined and no evidence of cancer was found. When he refused food he was discharged. He again fainted on the street and was taken to another hospital. Here his experience was repeated. In this way he was treated in four different hospitals. By this time he had reached a state of extreme emaciation and weighed about 115 pounds. Mental examination showed advanced deterioration, gustatory and tactile hallucinations, and numerous absurd delusions. He was committed to a State Hospital.

Case No. 3. W. R. Male. Age 40. American. Bridge-tender. Patient received a meager education and was brought up in a very bad environment. From the time he was 14 he indulged in all sorts of sexual irregularities. He enlisted in the Army and fought in the Spanish-American war. After he left the Army he secured a position as bridge-tender, a position which called for little action but entailed considerable danger. On January 25, 1915, he appeared at the clinic, complaining of a sensation of twitching of the nerves of his scalp, sleeplessness, fear of being left alone, fear of suicide and insanity. Mental examination revealed an Oedipus complex. The patient had lived for years with his widowed mother and slept in the same room with her. In May, 1914, his brother committed suicide. The shock to the mother and her subsequent grief led the patient to fear he also might become ill, meet with an

accident or commit suicide. He grew afraid to attend to his work on the bridge lest he might be killed or injured. He developed a pain in his right side and was operated upon for appendicitis. Two weeks after the operation the pain returned. Later it shifted to the left side and affected his heart. He grew sleepless, lost 30 pounds in weight, developed parasthesias and phobias as described above. After daily attendance at the clinic for a month, he returned to his home apparently entirely well.

Case No. 4. M. H. and E. H. (sisters). Ages 22 and 19 respectively. These girls were brought to the clinic by a social worker who stated that in March, 1915, the mother had been committed to a state hospital. Almost immediately afterwards both girls began to act peculiarly and were thought by neighbors to be insane.

The history of the elder girl showed that she progressed normally up to the age of fifteen. After leaving school she studied stenography and typewriting. She secured a position at $10 per week which she held for several months. She began to have difficulty in keeping her mind on anything for any length of time, and lost one position after another. For two years she had been unable to hold any kind of a position for more than two or three days. Mental examination showed marked deterioration, with great dilapidation of thought, loquacity and circumstantiality.

Examination of the younger girl showed a mentality practically normal. After the commitment of her mother to a state hospital she and her sister had been much alone together. The elder sister's levity, loquacity and funny remarks attracted a great deal of attention, especially from the boys of their acquaintance, and the younger sister began to copy her style. The girls indulged in all sorts of pranks, frequently staying up all night and sleeping all day. The elder sister was committed to a state hospital where she has since had an acute maniacal outbreak. The younger was placed in a girls' boarding-house where she soon returned to her normal manner of life.

Case No. 5. M. D. Male. Age 40. Portuguese. Farmer. Family and early personal history were negative. For several years prior to the patient's appearance at clinic he had been living on a ranch with a woman to whom he was not married, but by whom he had two children. This woman developed a cough, and expectorated a great deal. The patient believed she had tuberculosis. In June, 1914, while he was working in the field, his little boy brought him some bread and butter. He offered the child a piece, but the child refused, saying "Mother told me not to eat any of it." The patient believed that the woman had put tubercular germs on the bread in order that he might contract the disease. He stated that the germs had grown until they were the size of worms. These worms crawled around constantly in his stomach and under his skin. He began to have a bitter taste in his mouth from the poison elaborated by these worms, and his voice began to change. On April 1, 1915, he appeared at the clinic. Mental examination showed that he was of a low order of intelligence, but that there was no evidence of deterioration present. He had tactile and gustatory hallucinations and delusions of persecutions. He finally separated from the woman and settled some legal complications in connection with her. On his last appearance at clinic, June 9, 1915, the bitter taste had disappeared, his voice was normal, and the worms had practically disappeared from his system. He had gained 9 pounds in weight.

Case No. 6. M. McI. Female. Age 19. American. Telephone operator. Patient was seclusive and retiring as a child. Was said to have had two epileptic seizures when 15 years of age. At 16 she went to work as a telephone operator. At 17 she began to be troubled with hoarseness, which persisted for two years. Adenoids and tonsils were removed, but still the hoarseness continued. The Wassermann reaction in the blood was positive, and she was given anti-luetic treatment. As she appeared at the clinic from time to time she complained of all sorts of symptoms. On one occasion became totally blind for three days. She frequently fainted on the street and in public places. On April 26, 1915, she appeared with all the subjective symptoms of acute appendicitis. The physical signs, however, were lacking and she was referred to the psychiatric clinic. Mental examination showed that she was feeble-minded, having the mentality of a child about 12 years of age. She was also hypersuggestible. On April 15 she had visited in a hospital in Oakland, a girl friend who had been operated upon for appendicitis. This girl gave the patient a very full account of her illness. The following day the patient developed pain in the right side of the abdomen, emesis, and a sense of suffocation. The patient admitted that at one time she had been a patient at the University Hospital for three days and enjoyed her stay. She also admitted that she was tired working and that she disliked exceedingly the early morning rising which her work as a telephone operator necessitated. After being given some good advice, the patient returned to her home in Oakland and has not appeared at clinic since.

Case No. 7. A. M. Male. Age 42. American. Cook. Patient described his mother as being "Not very bright." The father was harsh and cruel, and beat the patient with a strap when he was a child. The patient was a timid, nervous child, and began to stutter at the age of six, shortly after he commenced school. He was under a tremendous nervous strain during his entire school life, always being fearful he would not be able to recite when his turn came. At times he was stricken dumb with fear.

The patient was obliged to help his father in the harness business until the death of the latter, when he became a cook, which occupation he liked much better. On May 9, 1915, the patient appeared at the clinic complaining of "nerve weakness." He stated his nerves felt as though charged with electricity, and at times he had "nerve eruptions," when every nerve in his body trembled and quivered. Mental examination showed that the patient was homosexual and that his whole life had been dominated by his father's ideas. When he was a child he was left-handed. His father told him if he would learn to use his right hand he would overcome his stuttering. In this way he had almost entirely cured himself. After the patient's mother died, his father remarried. The patient stated that his mother was displeased with the marriage, and communicated her displeasure by rappings on the walls and objects in the patient's room at night. After his father died he appeared to the patient in various ways, sometimes by rapping, sometimes by moving objects in the room at night. On one occasion the father stood before the patient, dressed as he was wont to do when alive. The patient stated he believed his father appeared to him because he was displeased with him for being a cook, instead of choosing some more manly occupation. At the same time the patient felt he was better adapted to that work than any other, hence the conflict.

In many ways the work of the psychiatric clinic has been unsatisfactory. First, because of the very limited amount of time given to it, and second, because of the absence of any facilities for treating mental cases in San Francisco. The excellent results obtained in a number of cases were largely due to the interest and co-operation of Dr. Milton B. Lennon, Chief of the Nerve Clinic, and Dr. C. L. Tranter, his assistant. In only a few cases was

any attempt made at psychanalysis and psychotherapy.

Of the 100 cases seen 10 have had to be committed to state hospitals, and many more will eventually have to go there. If these cases when first seen could have been taken out of their environment, placed in a psychopathic hospital where they could have received rest, proper nourishment, hydrotherapy and psychotherapy, doubtless several would have recovered in a short time. Several cases were found to be harboring suicidal intentions. Two of these cases went to state hospitals as voluntary patients. In one the suicidal impulse was so strong that he could not trust himself to go to the hospital alone on the train. Arrangements were made for him to accompany the deputy sheriff who was taking other patients.

Notwithstanding the many handicaps, considerable has been accomplished, and a number of patients have been tided over a critical period in their lives, where without this help they would have had a break which would have resulted in suicide or complete mental derangement.

The fact that without any publicity, 100 cases found their way to such a clinic in the first ten months of its existence, would indicate that in this long-neglected branch of preventive medicine there is a rich field for active and fruitful work.

ADDRESS OF WELCOME DELIVERED BEFORE THE PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY AT SAN FRANCISCO, CALIFORNIA.

By H. B. GRAHAM, M. D., San Francisco.

Mr. President and Gentlemen: 1915 will be a year that will certainly be remembered in history. Not alone has a universal military upheaval, such as the world has never experienced and hopes never to experience again, placed these figures indelibly in our school books, but the wedding of the Atlantic and the Pacific at Panama has added *its* element of permanency to the grouping. As one walks through the beautiful grounds established to celebrate this wedding, and as one studies the many sincere efforts made to guide our people to a better mode of living, we begin to realize more and more what a great advance civilization has made in spite of our apparent barbarities. This, however, is much tempered by the realization of what an immense chasm exists between the present and the ideal life.

Probably no fair has ever been erected which has accomplished so much in advancing the common people's ideals in music, art, architecture, beauty, health, cleanliness and quietude, in general the cultivation of the esthetic in life, as this, our Panama-Pacific.

One cannot grasp the whole intent of the architects, the gardeners, the sculptors, the electricians and the artists without considerable help from without, and study of some such descriptions as those of James, Macomber or Neuhaus, but as the colors have unfolded day by day, and the work has become more complete, the meaning of it all has crept in and it has begun to dawn upon us that something really big was happening.

Those of us who passed through the big earthquake and fire experienced somewhat the same unfolding of sentiment, that something big was developing. It will live; it will live as a national awakening even though the travertin and timber disappear, and those of us who have come here to glimpse at this lotus flower, as well as those of us who have watched the unfolding of the petals will be better men and women, will go back to our work better fitted to help guide the civic and moral life of our peoples in our various communities from having seen it all.

The stolid grandeur of the great mechanics building with its supurb arches and virile male decorative figures, the delicate tracery of Mulgart's forest-like court, the subdued truth and restfulness of the Court of the Seasons, and the peace and quiet of Maybeck's dream vision which in its female loveliness beckons the lover of art to forget his discomfiture and anguish of mind at the distortion within, to a peace-making garden without, have done much already to awaken in those who have seen them, sentiments of reform and a struggle to attain something better, something higher in the community.

The noble aims of the builders of the Exposition to produce something that would stimulate our people to the utilization of their hills for beautiful scenic effects, to build and group more artistically their civic buildings, to decorate our streets and water fronts, and do away with unsightly edifices has been ably seconded by the exhibitors, such as the U. S. Government and others, in their attempt to show the people how good roads are built, how to decorate our gardens, how to bring good music into our lives, how to eradicate the mosquito, how to economize in food products, how, in fact, to bring reform into our homes along all lines.

And we welcome this Society here at the Exposition gate to-day for the purpose for which it came, in the quest of this knowledge and reform.

The medical profession is well aware (far more so than the laity), how great is the need of knowledge and reform within our ranks and it knows that by organization alone can that reform be brought about, that education be acquired. In these meetings is our strength. And, here in the West, we are doubly in need of organization of this character on account of our isolation.

Heretofore, on account of our isolation, it has been an easy matter to acquire a superficial education, especially in the special lines and to adopt easy methods to riches; our educational system especially has been in need of a shaking up. Some of our societies have dropped into a lethargic condition, or never have risen out of it and our members have sat back and been content to drift. These things are changing and the stimulus given

to this awakening by the fair and these annual meetings will bear its fruit. In the near future, it will be a difficult matter for a man to go to Chicago for a six weeks' course in eye, ear, nose and throat, and lung diseases, including asthma, and come back to be heralded as a savior of mankind. In the future it will be difficult for him to impress his one thousand townspeople by his postcards sent in catapultic rapidity, in the course of a week from Vienna, Freiburg, Berlin, Griefswald and Copenhagen.

Our men of affairs through these organizations are grasping the situation and demanding a knowledge of the subject in hand. The charlatan and the ignoramus are being placed in the same bag and dropped into oblivion. Let them stay there. Our universities and city fathers, backed by an awakened civic moral conscience, are taking hold of our responsible institutions and eliminating the unfit hanger-on.

We are realizing more and more that there is such a thing as *efficiency* and that we as a community have a right to demand the public service of the efficient without the influence of a gang of rough-neck politicians. We refuse any longer to pay taxes for good roads and, for the want of an expert, to see that road become impassable in six months' time, or to erect a hospital only to see it equipped by an inefficient management.

We welcome this association here because we think that it stands for a union of strong forces in the West that will help these sentiments along; that it stands for something else beside the reading of a scientific program and a pleasure jaunt. I believe that the sentiment of such an organization can be directed toward the accomplishment of large reforms along many lines throughout our glorious West; that the menace to the public from the spitting nuisance, the spittle on the street-car transfer and money, the drinking fountain and towel nuisance, unnecessary odor and noise nuisances, such as the clanging of bells, tooting of horns and the idiotic blowing of hideous sirens to tickle the vanity of some fat politician or hottentot potentate will become things of the past through the personal effort of individual members of this association.

I believe that the influence of this Fair at this particular time of stress and strain will be immense, that it will act as a balance wheel on a wobbly engine and will serve to make for a calm judgment where hotheads are more in evidence. As an educational factor, its stimulus will be felt by the medical profession probably more than in any other vocation on account of its influence on the laity in showing them the way to a rational judgment. We need a populace who have an intelligent knowledge of what we are trying to accomplish for them as well as an educated profession, that our legislators may not hamper the work and we are gathered together to-day to view this educational undertaking.

Gentlemen, I, in the name of the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, welcome you and bid you Godspeed in your work.

"PULSATING EXOPHTHALMOS TREATED BY SLOW OCCLUSION OF THE COMMON CAROTID ARTERY WITH THE NEFF CLAMP."*

By STEPHEN D. BRAZEAU, M.D., Spokane.

The only methods hitherto used for the treatment of traumatic pulsating exophthalmos are ligature of one or both of the internal carotids, intraorbital excision of the aneurysm, external compression of the common carotid, gelatin injections, the administration of drugs and rest with the view of lowering blood pressure, the ligation of one or both common carotids, and ligature of the superior ophthalmic vein. De Schweinitz, Holloway and Bedell report 246 cases to date and although these cases are quite carefully tabulated it is impossible to draw any definite conclusions regarding the best method of procedure. All of these methods with the exception of the ligation of the common carotid and ligation of the superior ophthalmic vein have been of little or no avail and the former although immediately successful in a small percentage of cases is attendant with grave danger to the patient. The patients who recover suffer with cerebral ischemia for months or sooner or later develop symptoms of cerebral softening. The mortality following ligation of the common carotid as reported by various surgeons is 25% to 50%, death being due to anemia of the brain or secondary hemorrhage or cerebral disturbances.

According to LeFort 45% of cases have cerebral disturbances, Siegrist's statistics show 38%, Jordan 25%, and De Fourmestraux (French Congress of Surgeons in 1908) reported 21% in his personal experience. Bryant and Buck state that out of ligation of the common carotid in 789 cases for various reason 323 or about 41% died. Danger not only occurs from cerebral softening but also from thrombosis.

Abernathy in 1798 was the first to attempt tying the common carotid to arrest bleeding and in 1806 Sir Astley Cooper successfully ligated the vessels for aneurysm. Since then a number of cases are reported and the rate of mortality owing to modern methods and asepsis has become less. But in spite of modern surgical technic the danger of sudden death from cerebral and other complications make the method of the ligature of a large vessel a very unsatisfactory mode of treatment. All of the men who have attempted the procedure realize this risk and have suggested the use of metal clamps as advocated by Lambotte, Matas, or Halstead for gradual occlusion.

Halstead's method consisted in the use of aluminum bands bent so as to include the artery but it accomplished only partial occlusion. Matas's bands were similar to those of Halstead but no more effective. Keen devised an apparatus by which he applied two bands and approximated them with an adjusting screw. Stratton of Oakland, California, in the *Journal of the A. M. A.* of March 1906 described an appliance used by him in slow occlusion of the abdominal aorta for

* Read at the Third Annual Meeting of the Pacific Coast Oto-Ophthalmological Society, San Francisco, June, 1915.

aneurysm. It is a very ingenious apparatus but the results in this case were fatal.

The method which I wish to report in this paper is a slow occlusion of the common carotid in the treatment of a case of pulsating exophthalmos accomplished by the use of a clamp devised by Dr. James Neff, of Spokane. In this patient the results were immediate and in the two years which have transpired no untoward results have occurred.

The clamp consists of two aluminum bands with hinge joint. Upon the free ends are two grooves—a deep one in which the catgut is retained for the regulation of the distance between the plates and the automatic occlusion as the catgut absorbs, and a second groove in which a band of dental rubber is wound to approximate the plates gradually without wounding the intima of the vessel. The size of the aluminum bands will depend upon the vessel included.

The patient, A. H., age 39, a county charge referred to me by Doctor B. H. Roark July 25, 1913, presented the following history: Four years previous he had gotten into an altercation with a fellow laborer who gave him a terrific blow on the left cheek. He expectorated blood all night and felt indisposed but went to work next day. There occurred a roaring in the right ear two days afterward which sounded like the noise of an engine, and so intense at night he could not sleep lying down so sat up in a chair. This condition continued for two months. Three months later the right eye suddenly began to bulge, following a severe pain in temple. He was not incapacitated for work but complained of dizziness, diplopia, and attacks of faintness. He remained at work until the exophthalmos, roaring in head, loss of vision, and faintness grew so intense that he fell in a seizure and was unconscious for some time. He was removed to the Sacred Heart Hospital by Dr. Roark who later referred him to me for enucleation of the right eye. The patient showed upon superficial examination a decided exophthalmos, enlargement of the superficial supraorbital veins of the temple, paralysis of the external rectus muscle and congestion of the ocular and palpebral veins of the conjunctiva. The vision was reduced to counting fingers. The case was so interesting that a more careful examination was made at the office. There was a pulsating tumor upon digital examination of the orbital roof, a distinct bruit over the eyeball and supraorbital space (easily heard with the stethoscope) and fundus examination showed marked dilatation of the retinal vessels, and an optic neuritis. Left eye vision 6/6, and right eye vision fingers at three feet.

The diagnosis of pulsating exophthalmos was apparent. The patient was the father of eight children, incapacitated for work and the ligation of the common carotid was advised. He was told of its attendant danger but decided to take the risk. It was such an ideal case for the employment of the Neff gradual occlusion clamp that it was decided to try it upon the patient as it had been successfully used in experimental work.

Upon July 30, 1913, Dr. A. T. R. Cunningham, assisted by Dr. M. M. Patton, exposed the right common carotid and applied the device as described by Neff in an article in the Journal of the A. M. A. of August 26, 1911.

The pulsation and bruit disappeared in four days, the patient was comfortable and slept in a reclining position. In ten days he left the hospital with all annoying symptoms gone. The exophthalmos and dilation of the conjunctival veins gradually subsided and upon September 30, the patient was at work. February 12, 1914, there was still a bulging, the veins still somewhat congested but vision with correcting glass had returned to 6/15 and the patient was feeling fine. Upon September 3, 1914, the exophthalmos was hardly perceptible, motility of the eye normal, there was no bruit, and no pulsation. Vision with correction had reached 8/10. With right eye he read number 2 Jaeger. Upon April 27, 1915, examination showed a complete retraction of the globe into the orbit, no bruit, no pulsation, no congestion of the conjunctival vessels or the veins surrounding the orbit and restoration of vision to 8/10 with his correcting lenses. He is free from dizziness and has had no fainting spells since the operation and has been working as a deliveryman since August 30, 1913, one month following operation.

From our experience in this case we conclude or suggest that in cases of pulsating exophthalmos or any other case where occlusion of a large blood vessel is indicated the most practical method is gradual occlusion by means of the Neff clamp. It seems to meet the requirements in such cases for it prevents the danger of a secondary hemorrhage which attends the sudden stoppage of the blood current, it gives ample time for establishment of the collateral circulation, and prevents cerebral ischemia and later cerebral softening resulting in 50% of cases by death. It also shortens the period of recovery; in this particular case the patient resuming work within thirty days of the operation. For the technic of applying the clamp I refer you to the article appearing in the *Journal of the A. M. A.* by Dr. Neff, or the articles by Dr. A. T. R. Cunningham of Spokane in the *Journal of the A. M. A.* of January 1914, in which this case is reported from the surgical standpoint.

NOTICE.

SEND CHANGE OF OFFICE AND HOURS to the CALIFORNIA STATE JOURNAL OF MEDICINE

BOOK REVIEWS

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. August, 1915. Published bimonthly by W. B. Saunders Company, Philadelphia and London.

Contents: Talk on Syphilis. Tumor of the Parotid Salivary Gland. Plastic Operation on Soft Parts of Nose. Plastic Operation on Skeleton of Nose. Carcinoma of Lower Lip and of Submaxillary Lymph-Nodes. Early Carcinoma of Lower Lip. Osteomyelitis of the Maxillary Antrum. Trau-

matic Epilepsy. Extradural Cerebral Compression. Ancient Fracture of Skull. Tuberculous Meningitis. Tuberculous Leptomeningitis and Ependymitis With Necropsy. Subacrominal Bursitis. Subungual Carcinoma of Finger. Ununited Fracture of Humerus. Ancient Gunshot Division of Musculospiral Nerve. Ancient Fracture of External Condyle of Humerus. Infantile Palsy of Flexors of Hand and Fingers. Tuberculosis of Sternum and Rib. Metastatic Thymus Tumor in Breast. Bronchietatic Cavity. Traumatic Cervical Spondylitis. Bony Tumor of the Spinal Canal. Tuberculous Granuloma of Vertebrae Involving Spinal Cord. Constriction of Spinal Cord by Fibrous Tissue from Previous Operation. Typhoid Spondylitis in a Typhoid Carrier. Cholelithiasis. Fecal Fistula with Chronic Recurrent Appendicitis. Papilloma of Bladder. Fracture of Left Patella. Fracture of Internal Semilunar Cartilage. Compound Fracture of Both Feet.

Principles of Bacteriology. By A. C. Abbott, M. D. Ninth Edition. Published by Lea & Febiger, Philadelphia and London. 1915.

As a book for students Abbott's Bacteriology has always been of great value, and this, the ninth edition, with its new chapters on hemolysis, complement-fixation and Ehrlich's side-chain theory brings it thoroughly up to date. Some material of historical interest only, which was present in earlier editions, has been eliminated, so that although much that is new has been added, the book remains small enough to be easily handled, and the subject matter is conveniently arranged and in better sequence than in previous issues. As a reference book Abbott's Bacteriology may well find a place on the shelves of the advanced worker as well as of the beginner. A. W.

Surgery of the Blood Vessels. By J. Shelton Horsley, M. D., F. A. C. S. Illustrated. St. Louis, C. V. Mosby Company. 1915. Price $4.00.

This is a book devoted almost entirely to blood vessel surgery and necessarily deals with the experimental quite as much as with the practical. Chapters on the general principles of vascular surgery, sutures, anastomosis, thrombosis, and transfusion are all instructive. The author advocates his special staff for holding blood vessels during suture and prefers the sadler's stitch. His reasons for this are plausible and his success vindicates the method. The various schemes for transfusion are detailed impartially. His own preference seems to be by suture. A simple test for hemolysis and agglutination is described. His own number of transfusions, something under 25, is rather small for one whose name has been so well identified with this work. The illustrations are quite good and add much to the interest of the book. S. T. P.

The Medical Clinics of Chicago, July, 1915. Vol. I, Number 1. Published bi-monthly by W. B. Saunders Company, Philadelphia and London.

Contents.

Clinic of Dr. Charles L. Mix.—Lung abscess with the picture of tuberculosis. A lesion of the cauda equina; sciatica the most prominent symptom.

Clinic of Dr. Charles Spencer Williamson.—Nephritis. Case of hepatic abscess. Gout. Further discussion of cases shown at previous clinic. Chronic gout with extensive joint changes.

Clinic of Dr. Isaac A. Abt.—Infantile tuberculosis. Sarcoma of kidney in a child eighteen months old.

Clinic of Dr. Robert B. Preble.—Chronic lymphatic leukemia in a man of 65, with discussion on the causes of dyspnea. Renal and cardiac insufficiency.

Clinic of Dr. Maurice L. Goodkind.—Pneumonia. Tabes. Cholelithiasis. Foreign body in the bronchus 6 months with complete recovery after removal.

Clinic of Dr. Frederick Tice.—Syphilitic aortitis. Hour-glass stomach.

Clinic of Dr. Walter Hamburger.—Congenital pulmonary stenosis. Aneurysm of the arch of the aorta and of the abdominal aorta.

Clinic of Dr. Ralph C. Hamill.—Syphilis of the central nervous system.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. June 1915. Published Bi-Monthly by W. B. Saunders Co., Philadelphia and London.

Contents.

Murphy's clinical talks on surgical and general diagnosis.

A talk on appendicitis.

A diagnostic talk on intestinal obstruction due to a large gallstone.

Unsuccessful gastro-enterostomy for ulcer. An analysis of its causes. Suggestions for a better technic.

Friction burn of left ankle—closure of the defect by a pedicled flap of skin and fat.

A series of drawings illustrating Dr. Murphy's method of suturing a pedicled muscle flap into the laminectomy defect to protect the exposed dura and obliterate the dead space which would otherwise fill with blood-clot.

Embryonic tumor of the testicle—excision of tumor and testicle.

Tuberculosis of the left spermatic cord and epididymis.

Chronic tendovaginitis of the extensor tendon of the thumb.

Painful exostosis of the os calcis.

Congenital perineal fecal fistula.

Hypernephroma of the right kidney—nephrectomy.

Myeloid sarcoma of the left malar bone.

Malignant epulis of the mandible—excision.

General Medicine. Edited by Frank Billings and J. H. Salisbury. Practical Medicine Series 1914 and 1915. Price $1.50. Published by Yearbook Publishing Co., Chicago.

We are always glad to recommend these little volumes because they give such a good résumé of the work that has been accomplished in medicine during the past year. References are given to the articles reviewed so that those that are interested can always consult the originals. No matter how thorough a man may be, he is bound at times to overlook some paper that may be of interest to him unless he goes through one of these little books and looks up the articles of note that have appeared. The present books are up to the usual standard. R. B.

Medical Applied Anatomy for Students and Practitioners. By T. B. Johnston, M. D., Ch. B., Containing three full-page plates in color and 146 other illustrations in the text. London, A. & C. Black, Limited. 1915.

This book will be very acceptable to the medical practitioner who desires to have his medical anatomy apart from the surgical applied anatomy. The author has not attempted to give an exhaustive treatise, but has restricted the subject matter so as to present at moderate length the more important applications of anatomy to the study of clinical medicine. The subject has been treated according to systems and not according to regions. The subject matter has, therefore, been considered under seven systems followed by a glossary that contains only those terms which are commonly used in clinical medicine and which are not identical in the two terminologies. The Basle

terminology has been used to a large extent, the old and better known names have been inserted in brackets wherever it was thought necessary to avoid confusion. Black-faced type and italics are used to indicate and emphasize the chief headings and the particular part or organ under consideration. The work is worthy of recommendation to all.

F. E. B.

Alveolodental Pyorrhea. By Charles C. Bass, M. D., Professor of Experimental Medicine, and Foster M. Johns, M. D., Instructor in the Laboratories of Clinical Medicine at the Tulane University Medical College, New Orleans, La. Octavo volume of 167 pages, with 42 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.50 net.

This book has been written with the distinct purpose of placing before the profession the theory that pyorrhea alveolaris is caused by the animal parasite or protozoan known as the endameba buccalis and that ipecac or its alkaloid emetine hydrochloride is the specific remedy for the disease.

Smith and Barrett of Philadelphia were the first to promulgate these views, but they were much less emphatic in their statements than are the authors of the book under review.

The interest which has been created in the subject by the researches of the above-named investigators and the authors of this book is very great indeed and the profession everywhere, both medical and dental, are asking if these statements are true.

There is only one way to prove the truth or falsity of these claims and that is by practical tests conducted along scientific lines. Many practitioners at the present time are employing ipecac and emetine in an empirical manner and are making many absurd claims as to their specific action.

The claim of the authors that the disease is "practically universal" and that "all sooner or later lose their teeth" (from this cause) "if they live long enough" are statements made without sufficient evidence. Carefully compiled statistics covering many thousands of examinations would be necessary to prove this contention.

That ipecac or emetine is a specific in this discase is also lacking in proof. At least a sufficient number of cases have not as yet been published to establish the fact.

The presence of endameba buccalis in the mouth does not necessarily mean that the individual has pyorrheal alveolaris, nor that the presence of this organism in a pyorrhea pocket is proof that it is the cause of the suppurative process. Bacteria of many varieties are found in the same pus. Why then, single out the endameba and insist that it is the specific cause?

The reviewer has found the endameba (living, motile specimens) in the scrapings from healthy gums, from the dorsum of the tongue, from the discharges from the nose, from the discharges of a dento-alveolar abscess involving the antrum, and also from the accumulation of food debris at the margins of the gums. Craig has also found it in dental caries. But in all of these cases prodigious numbers of bacteria of various forms were also found.

The book, however, is well worth reading, albeit there are many statements in it in relation to dental pathology particularly, to which the dental profession will take issue.

The name "Alveolodental Pyorrhea" adds another term of designation to an already overburdened nomenclature of this disease, and we are not sure that it is any better than those now in use. We question the advisability of using so many drawings of "pathologic conditions" when photographs would have been so much better and would have eliminated the personal equation entirely.

J. S. M.

SOCIETY REPORTS

FRESNO COUNTY.

The regular meeting of the Fresno County Medical Society was held September 7th, at the offices of Drs. Trowbridge and Craycroft. A good attendance of members, from our own and adjoining counties, was present to listen to the following program:

"Operative Treatment of Spinal Tuberculosis," by Dr. Walter I. Baldwin of San Francisco, and "Nervous Affections of Children," by Dr. Harold W. Wright of San Francisco. Dr. Baldwin exhibited a number of instructive X-rays and one very interesting and successful case. Dr. Wright urged the importance of careful diagnosis and treatment in order to save children who are out of the ordinary from being classed as hopelessly below par. He also urged the importance of systematic training for all defectives, no matter if only slight progress can be made. Both papers were greatly appreciated and were of distinct value to the society.

CLIFFORD D. SWEET,
Assistant Secretary.

ORANGE COUNTY MEDICAL SOCIETY.

The September meeting of the Orange County Medical Association was held on September 7, 1915, with a fairly good attendance.

Dr. Granville MacGowan gave a fine paper on "Local Anesthesia."

After the meeting a social lunch was enjoyed.

R. A. CUSHMAN, Secretary.

PLACER COUNTY.

The September meeting of the Placer County Medical Society was held Saturday evening, September 11, 1915, in the Masonic Hall, Colfax. There were present the following members and visitors: Members—Drs. Fay, Mackay, Couture, Miner, Sawyer, C. P. Jones, Bush, McCullough, H. T. Rooney, Peers. Visitors—Drs. J. T. Cox and F. R. Fairchild, Sacramento; J. L. Rollins and C. D. Durand, Colfax.

Dr. Miner and Dr. Jones reported cases.

Dr. Thos. J. Cox, Sacramento, read a paper entitled, "Surgery of Bones." Discussed by Drs. Fairchild, Mackay, Sawyer and Cox.

Dr. F. R. Fairchild then read a paper on "X-ray in Surgical Diagnosis," illustrated by means of lantern slides. Discussed by Drs. Cox, Bush, Peers and Fairchild.

After adjournment refreshments were served by the local physicians.

The next meeting will be held in October in Auburn.

ROBERT A. PEERS, Secretary.

John Emmett Thompson; Western Reserve University, Ohio, 1888; aged 57; Oculist and Aurist; Fellow of the American Medical Association; for many years on the staff of Mt. Zion Hospital, San Francisco; member of many fraternal and benevolent organizations; died from typhoid fever at his home in Berkeley, California, August 26, 1915.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of August, 1915, the following meetings were held:

Section on Medicine, Tuesday, August 3d.

1. The Wassermann Test in Newborn Infants. Langley Porter. Discussed by E. Victors (who reported a series of 129 Wassermann tests on pla-

cental blood at Mary's Help Hospital), and L. I. Breitstein.

2. The Incidence and Diagnosis of Congenital Lues. W. P. Lucas.

3. The Treatment of Congenital Lues. Hans Lisser. Discussed by H. H. Yerington and Langley Porter.

General Meeting, Tuesday, August 10th.

ST. FRANCIS HOSPITAL CLINICAL EVENING.

1. Large Extradural Abscess—Streptococcus Mucosus Infection. C. F. Welty. Discussed by H. D'Arcy Power.

2. Pain and Deformity. C. C. Crane. Discussed by J. T. Watkins.

3. Retroperitoneal Lymph Cyst. Report of Case of Gastroptosis Treated by Rovsing Method. Burt Stevens. Discussed by J. R. Graves.

4. Exhibition of Pathological Specimens. B. Jablons.

A. Spleen showing numerous stones.
B. Tumor of brain.
C. Carcinoma of cecum having origin at head of cecum.
D. Gas gangrene.

5. Exhibition of Roentgen Plates. M. P. Burnham.

A. Carcinoma of pylorus; gastrectomy.
B. Stone in gallbladder.
C. Carcinoma of colon.

Section on Surgery, Tuesday, August 17th.

1. Presentation of Cases. Dr. Emmet Rixford.
A. Fracture of femur.
B. Osteomyelitis of very vicious character, showing regeneration of bone after removal of shaft.
C. Case showing effect of transplantation of full thickness of skin from chest to second and third fingers, surface of which was destroyed by electrical burn.
D. Anterior dislocation of semilunar at wrist.
E. Fracture of neck of radius at elbow in child.

2. Reports of Cases of Aneurysm; with demonstration of two cases. George Rothganger. Discussed by F. Dudley Tait.

3. Reports of Cases of Hypertrophic Pyloric Stenosis in Infants. Demonstration of a Case. Stanley Stillman. Discussed by Langley Porter, A. Gates, F. D. Tait and Alanson Weeks.

Section on Eye, Ear, Nose and Throat, Tuesday, August 24th.

1. Demonstration of Cases.
A. Adult operated for congenital cleft palate. H. Horn.
B. Case operated for congenital choeanal, occlusion on right side. H. B. Graham.

2. The Larynx in Tuberculosis Patients. H. S. Moore. Discussed by H. Horn, K. Pischel, H. B. Graham, C. F. Welty and H. Y. McNaught.

3. Operative Technic in Carcinoma of the Larynx. W. I. Terry. Discussed by H. Horn, K. Pischel, S. T. Pope and M. E. Taber.

4. Observations on the Technic of Bronchoscopy and the Removal of Foreign Bodies. H. B. Graham. Discussed by S. T. Pope and M. E. Taber.

Section on Urology, Tuesday, August 31st.

1. The Prognosis of Prostatitis. M. E. Silverberg. Discussed by W. P. Willard, M. Krotoszyner, M. Wolff and W. E. Stevens.

2. Seminal Vesiculotomy; Indications and Technic; with Report of Cases. Frank Hinman. Discussed by C. W. Lippman, W. P. Willard, J. Rosenstirn, M. Molony and M. Krotoszyner.

3. Report on Cases of Sarcoma of the Testicle. W. P. Willard. Discussed by F. Hinman, J. Rosenstirn, F. D. Tait and M. Krotoszyner.

IN ERRATA.

Through an error in the September program of the San Francisco County Medical Society, the name of Dr. D. B. Plymire was included in the list of deceased members.

FLIES AND DIARRHEAL DISEASE.

Publication No. 91, New York Association for Improving the Condition of the Poor.

The Bureau of Public Health and Hygiene of the New York Association for Improving the Condition of the Poor has issued a special publication entitled, "Flies and Diarrheal Disease," descriptive of its three months' study in the homes of over a thousand infants in New York City on the relation of flies and diarrheal disease. Special attention has been given such influencing factors as dirt and artificial feeding, and their relative importance determined. A full description of the study with its important conclusions may be obtained by request from Philip S. Platt, Superintendent of the Bureau, 105 East 22d street, New York, N. Y.

TUBERCULOSIS FIGHT IN SAN FRANCISCO.

At the last meeting of the Board of Directors of the San Francisco County Medical Society, it was voted, "that the San Francisco County Medical Society endorse the proposition of the San Francisco Association for the Study and Prevention of Tuberculosis, to have the City establish a special Bureau of Tuberculosis under the auspices of the San Francisco Board of Health."

This action by the physicians came as a result of the report recently made to the Department of Public Health by the Tuberculosis Association, revealing conditions in the city and urging that a division of the department be created to fight the "White Plague."

This bureau, according to the report, would establish clinics for free examination of positive and suspected cases; engage visiting nurses to care for and instruct patients and their families in the home, and take general charge of the campaign.

The Association reasons that tuberculosis is essentially a problem in public health and should be supported by public funds.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon therapeutic agents offered to the medical profession. The editor will gladly supply available information on matters coming within the scope of this Department.)

LEUKOCYTIC EXTRACT—ITS PREPARATION AND USES.*

By ARTHUR R. MEINHARD, June 1915.

It is now a well established fact that one of the chief forms of protection of the animal body to bacterial invasion is through the action of certain of the white-blood cells or the so-called phagocytic cells. These cells which are easily able to wander through the walls of the blood vessels, are drawn

* Read before the Scientific Section of the 63d Annual Meeting of the American Pharmaceutical Association, San Francisco, August, 1915.

by positive chemotactic action to the infected area and act by ingesting the trouble-causing bacteria, destroying them and neutralizing their poisons. It is the purpose of this paper to dwell especially upon the nature of these poison neutralizing substances in the leucocytes, methods whereby they can be obtained from the lower animals for use in human infections, and their use in medicine.

Bacteria may be divided into two general classes, according to their poison producing powers; first, those which secrete soluble toxins of which the tetanus and diphtheria bacilli are examples, and secondly those that do not secrete soluble toxins in which the poison or endotoxin is more or less fixed to the bacterial body. Examples of these are the pneumococcus, meningococcus, and typhoid bacillus.

Curative sera are easily obtained for the first of these two classes of bacteria by the injection into animals of graduated amounts of toxin which results in the formation in the blood of the immunized animal of an antitoxin. In this way are procured tetanus and diphtheria antitoxin.

The production of an antitoxin for this second group of bacteria has not met with any success. The injection of these endotoxins into an animal results not in the production of an antitoxin but in the production of bactericidal and bacteriolytic substances.

Immune sera have been prepared for the treatment of streptococcus and pneumococcus infections, but the action of these sera is probably due to the bactericidal powers of the serum and to an increase of immune bodies, the so-called opsonins of Wright or the bacteriotropins which may or may not be the same immune body. These bodies attach themselves to the invading bacteria and render them more susceptible to the action of the leucocytes, and not to antitoxins in the serum. The use of these sera has not met with as great success as has the use of antitoxins.

As mentioned above one method of action of the leucocytes on the bacterial body is through the preparation of the bacteria by the opsonins for ingestion by the leukocytes. The amount of this immune body in the serum controls the extent to which the bacteria are taken up by the leucocytes, destroyed, and their contained poisons neutralized by the ferment termed by Petterson [1] endolysins.

Hiss [2] however speaks of another form of leucocytic action upon bacteria which is independent of the amount of opsonin in the serum. There is a gradual depression of the phagocytic action of the leucocytes up to the height of the infection, and then an increase in action as the infection terminates. It was with this theory in view that Hiss [3] made the following statement: "In many diseases we are dealing probably with an immunity a large part of whose mechanism is individually cellular, not only in the sense of phagocytosis and digestion but in the neutralization of poisons given rise to by the disintegration of the bacteria, a mechanism in which the protecting cells must intervene and unaided by bodies in the plasma, neutralize within themselves the poisonous products of the invading microorganisms."

With this hypothesis in view Hiss [4] and later Hiss and Zinsser [5] undertook a series of experiments to see if they could obtain suitable extracts of leucocytes containing these neutralizing bodies in solution for the treatment of various infections, and to study the action of these leucocytic extracts upon different bacteria. Theoretically, such extracts if containing this poison neutralizing substance or endolysin in solution should when injected into the bodies of human beings or other animals rapidly diffuse through the blood stream and neutralize the toxins or other poisonous substances, in this way coming to the aid of and relieving the leucocytes for the time being and allowing them to form new endolysins within themselves.

The method finally used by Hiss after much experiment for obtaining leucocytic extracts was as follows and is much the same method as is in use to-day: Rabbits of about 2000 grams weight were tied down, the thoracic region shaved and sterilized and ten cubic centimeters of aleuronat mixture injected into each pleural cavity, between the intercostal spaces, care being taken to avoid puncturing the lungs. The aleuronat mixture was prepared by dissolving 3% starch and 5% aleuronat in cold meat infusion broth, then boiling over a free flame for five minutes and finally filling into large test tubes and sterilizing in an autoclave. At the end of 18 to 24 hours the injected animals were killed, the pleural cavities opened and the contained cloudy fluid consisting of serum, leucocytes and some erythrocytes, put into sterile centrifuge tubes and centrifuged at high speed until the supernatant serum was clear and then this serum was poured off. The leucocytes were then extracted in distilled water in an incubator for six or eight hours, then the extract examined bacteriologically for sterility and if sterile was used.

The first experiments of Hiss were on rabbits injected with large doses of staphylococcus. That the strain used was virulent was shown by the death in every case of the animals used as controls, while the other animals which were given small doses of leucocytic extract at intervals of one to five hours after the injection of the bacteria either completely recovered or lived for a much longer period of time than did the control animals.

Later, further experiments were carried on by Hiss and Zinsser [6] on rabbits, using pneumococcus, typhoid bacilli, and meningococcus. Here the results were about the same as mentioned above, and further, some of the animals recovered when leucocytic extract was not given until 24 hours after a dose of bacteria had been given, large enough to kill the control animals. In these experiments was shown beautifully the resulting drop in temperature after an injection of leucocytic extract showing a neutralization of the poisons.

In view of these successful experiments it was thought advisable to try leucocytic extract upon human beings. It was first tried on 24 people suffering from meningococcus infection. Most of these cases were of a severe type or came under treatment late in the disease when the infection had brought about a state of grave toxaemia, and great emaciation. Two of these cases left the hospital before treatment was fully established, fourteen were discharged as cured and eight died, which calculated in percentages gives 63.6% cured and 36.4% fatal. The injections of leucocytic extract resulted in an improvement of the symptoms depending upon the central nervous system, and vomiting, delirium, stupor and hyperesthesia were either greatly diminished or disappeared after one or two injections of from five to twenty-five cc. of the extract. There was also a marked reduction in the temperatures.

Seven cases of lobar pneumonia were also treated with the extract. Here there was a recovery of 100% of the cases treated. Here also there was the characteristic drop in temperature, and a change for the better in the subjective symptoms.

Later eleven cases of staphylococcus infection were treated by the same authors [7] with splendid results. Eight of these were cases of chronic furunculosis which had lasted in spite of surgical and dietetic treatment for periods of from a few months to some years. In all but one of these cases there was a complete cure made, while in three acute cases treated the same results followed.

Floyd and Lucas [8] reported the use of leucocytic extract in forty cases of pneumonia with

a mortality of 12%, while in a series of twenty-five cases not treated with leucocytic extract the mortality was more than double.

Lambert[9] treated a number of cases, most of them being erysipelas, with results which in his opinion warranted further trials.

Meinhard[10] in experiments upon thirty-nine rabbits and using four times the dose of pneumococcus necessary to kill these animals, showed a mortality for the control animals not treated with leucocytic extract of nearly 100% with recovery of almost 100% for treated animals, although some of these animals did not receive the extract until nearly forty-eight hours after the initial injection of pneumococcus. In these experiments was noted the typical fall of temperature and increase of appetite following the injections of the extract. A small amount of preservative was used for the first time in these experiments and shown to be of no harm to the potency of the extract. A further improvement was also made in the extract by adding a strong solution of sodium chloride to the extracted leucocytes, enough of this salt solution being added to make the extract of physiological salt solution strength. This was done as it had been shown that when the watery solution of the extract was injected it was very painful, while injections of physiological salt solution were not.

Reynolds,[11] reporting a series of nine cases of pneumonia with 100% recoveries, remarks: "A complete description of these cases represents a severe form of pneumonia running a full course with moderate temperature curve, scarcely noticeable delirium, comparative freedom from toxic effects on the kidneys, and terminating by crisis at the usual time.

Beside these cases reported leucocytic extract has been used with great success on the Pacific Coast for the treatment of lobar pneumonia, but as yet many of these cases have not been reported.

Reviewing these cases it is easy to see that leucocytic extract is of use in neutralizing bacterial poisons in the animal body, as evidenced by the fall in temperature, general lessening of toxic symptoms and decrease of central nervous system symptoms. It also in neutralizing these poisons gives the leucocytes a chance to recuperate and form new endolysins.

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ITEMS OF INTEREST.

PERTUSSIS VACCINE.—The New York Department of Health appeals to the physicians of New York for a more extended use of vaccine in the treatment of pertussis. Most favorable results have been obtained with the prophylactic use of the vaccine (Jour. A. M. A., Aug. 21, 1915, p. 724).

MIXED VACCINES.—There is no rational basis for the use of mixed vaccines. So far as infectious diseases, the etiology of which is known are concerned, they are caused by a single, specific organism, as for instance in diphtheria, tetanus, meningitis, typhoid fever. The mere presence of a multiplicity of organisms in cultures taken from an infected region is no sign that the symptoms are due to all the organisms. The use of the stock mixed vaccines of commerce is irrational because it is based on the conception that infections are caused by more than one kind of micro-organism; it is harmful because it encourages superficial examination, slipshod diagnosis and routine treatment without individualization; it is unnecessary because, when the physician desires to use more than one vaccine, he can inject them separately or mix them at the time of injection (Jour. A. M. A., Aug. 21, 1915, p. 719).

URICSOL.—The Council on Pharmacy and Chemistry reports that Uricsol (Uricsol Chemical Co.) is a mixture of well-known drugs, marketed with false claims as to therapeutic action, with misleading and meaningless statements as to composition and under a name which invites uncritical prescribing. Examination in the A. M. A. Chemical Laboratory showed Uricsol to be a solution containing a large amount of sodium phosphate (64.20 Gm. in 100 Cc.) with small amounts of lithium, nitrate, citric acid and glycerine, with probably some vegetable extract (Jour. A. M. A., Aug. 14, 1915, p. 638).

FORMAMINT.—Formamint are throat tablets said to contain a compound of formaldehyde and milk sugar. In the United States it is advertised to physicians while in England the public is asked to use it for affections of many kinds. The Council on Pharmacy and Chemistry reports that false statements are made in regard to the composition of Formamint; grossly unwarranted claims are made for its therapeutic properties, and therefore its exploitation to the public is a public danger. The Council published the account of the exhaustive bacteriologic examination to call attention to the evils connected with Formamint and to the inefficiency of all methods of sterilizing the throat (Jour. A. M. A., Aug. 28, 1915, p. 816).

DUODENIN, ARMOUR.—Duodenin, Armour (Armour & Co.) is said to be prepared from the glandular or epithelial layer and mucous lining of the hog duodenum and to contain the maximum amount of secretin and enterokinase in stable form. The Council on Pharmacy and Chemistry held that there is no evidence for the administration of secretin or enterokinase and that, so far as the available evidence goes, these substances are inactive when administered. The Council voted that Duodenin, Armour, be not further considered until evidence is submitted to show that there are conditions in which secretin or enterokinase are absent and that these substances may be utilized by the organisms if administered (Jour. A. M. A., Aug. 14, 1915, p. 639).

FISHER REMEDY—According to the A. M. A. Chemical Laboratory, Fisher Remedy, a nostrum sold for the treatment of syphilis (five capsules cost twenty-five dollars), is composed of mercury subsulphate (Turpeth mineral) and mercury with chalk (Jour. A. M. A., Aug. 21, 1915, p. 733).

THE SO-CALLED NEW ANTISEPTIC.

Recently the newspapers have contained announcements of a new antiseptic or germicide that has proved, or is to prove, of great value in the treatment of the wounded in the present war. Credit for its discovery is given to Drs. Carrel and Dakin.

The antiseptic referred to is that which Dr. Dakin of the Herter Laboratory, New York—now serving as bacteriologist in a war hospital at Compiègne in France—announced in a paper read before the Académie des Sciences in Paris. It is made by the well-known process of adding sodium carbonate to a solution of chlorinated lime. The mixture is thoroughly shaken, and after half an hour the liquid is siphoned off from the precipitate of calcium carbonate and filtered through cotton. To this clear liquid, sufficient boric acid is added to make the preparation neutral or acid, the amount required being determined by titration with phenolphthalein. Such a solution was found to kill pus germs in two hours.

According to the British Medical Journal, about

a year ago Professor Cohen, of the University of Leeds, England, entered into communication with Dr. Dakin, a former student, regarding research on antiseptics for surgical use. The arrangement was that the substances elaborated by Professor Cohen should be tested bacteriologically by Dr. Dakin, and that the most promising should be tried clinically by Dr. Carrel.

At about the same time, under the auspices of an English medical research committee, a similar research by Prof. Lorrain Smith, with the assistance of Professor Drennan of the University of Otago, N. Z., Dr. Rettie, a chemical expert, and Lieutenant W. Campbell of the British army medical corps, was undertaken in the University of Edinburgh. Their results were reported in the British Medical Journal. The substance which they prepared was made by rubbing up chlorinated lime to a fine powder and mixing it with an equal weight of powdered boric acid. The ideal antiseptic for the field, they concluded, was a dry powder to be applied direct, which, it was believed, has advantage over a solution because it is more portable, and water is often not procurable.

Chlorinated lime, the basis of the so-called new antiseptic preparation, is well known as a powerful disinfectant. It is destructive to living tissues except in dilute solution. The same may be said of solution of chlorinated potash (Javelle water), which has been largely used by French surgeons in the present war, and of solution of chlorinated soda (Labarraque's solution). The advantage claimed for the new mixture is that the preparation, being practically neutral and unirritating to the tissues, may be applied in greater strength than that in which it is possible to use chlorinated lime, Javelle water or Labarraque's solution. Experiments indicate also that the germicidal activity of chlorinated lime is increased by such treatment of the calcium hypochlorite as has been described. Such increase in germicidal activity is generally attributed to the liberation of hypochlorous acid. It has been found that the activity of ordinary bleaching powder is greatly increasing by passing through it carbonic acid gas. Any other acid, as boric acid, will do as well. From the chemical point of view, therefore, says The Journal of the American Medical Association, there is nothing new in this method. That the practical application of such a mixture is not wholly new is proved by an earlier article published by Vincent in 1914. He suggested the application to ulcerating and gangrenous wounds of a mixture of chlorinated lime and boric acid.

RESTRICTED PRACTICE FOR DRUGLESS PRACTITIONERS.

Under the pretext that they were "not practicing medicine," so-called drugless practitioners have prevailed on the legislators of several states to pass laws granting them the privilege of obtaining licenses to treat the sick under educational standards that are lower than are required of physicians. In the majority of these states the law does not permit such practitioners to practice surgery or to prescribe drugs; they are supposed to limit their practice to the use of the method or system of treatment advocated by the particular cult to which they belong. This arrangement, in which the public interests are forgotten, if not deliberately set aside, is indefensible from every point of view according to The Journal of the American Medical Association. It is class legislation, since it provides unequal standards for different groups of practitioners of the healing art. The limitation of practice is dangerous, since those who undertake to treat the sick should be acquainted with all methods of treatment and be free to use the one which meets the immediate needs of the patient—to save his life, if it is an emergency case, the prompt administration of a drug may be essential. The arrangement is a serious handicap to those drugless practitioners who honestly comply with its provisions, and places a premium on law-breaking, deceit and pretense for those who disregard the restrictions. In short, this scheme of restricted practice provides a limitation which does not limit; it adds to the confusion already existing in the licensing of physicians; it defeats the purpose of the medical practice act, and betrays the public to the hordes of those who are not qualified by training to know whether a patient is sick or well, to differentiate between diseases, to select and apply the treatment most likely to result in a cure, or to take such measures as will prevent the spread of a contagious disease to others. The only way to correct the evils of this bad arrangement, and at the same time safeguard the public welfare, is to require every practitioner of the healing art to meet certain minimum educational qualifications by which it can be known that he has obtained a satisfactory training in the fundamental medical sciences. The interests of the public should not be pushed aside in order to favor any body of practitioners, by whatever name they may be called.

CALIFORNIA.

Our Medical Schools as described by the Council on Medical Education, Journal A. M. A., August 21, 1915.

California, population 2,757,895, has six medical colleges. Three are located in San Francisco, a city of 448,502 inhabitants. They are Leland Stanford Junior University School of Medicine, College of Medicine of the University of California and the College of Physicians and Surgeons. The College of Physicians and Surgeons, Medical Department of the University of Southern California, is situated in Los Angeles, population 438,914. The Oakland College of Medicine and Surgery is in Oakland, population 183,002. The College of Medical Evangelists is located at Loma Linda, a village of 110 people.

To secure license to practice medicine in California under the "physician's and surgeon's" certificate, students matriculating in medical colleges in and after the session of 1915-16, prior to such matriculation, must have completed at least one year of recognized collegiate work including college courses in physics, chemistry, biology and a modern language. This applies to all graduates of 1919 and thereafter.

Berkeley-San Francisco.

University of California Medical School, University Campus, Berkeley; Second and Parnassus avenues, San Francisco.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. In 1909 the College of Medicine of the University of Southern California, at Los Angeles, by legislative enactment, became a clinical department. This Los Angeles portion was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged and elective chairs in homeopathic materia medica and therapeutics were provided for. Two years of collegiate work are required for admission. The work of the first year and a half is given at Berkeley and the work of the last two and a half years at San Francisco. The faculty is composed of 23 professors and 72 associates and assistants, a total of 95. The course covers five years of nine months each, the fifth year to consist of an internship or of special work in a department of the medical school. Fees for the four years, respectively, are $190, $190, $167 and $167. The Dean is Dr. Herbert C. Moffitt, San Francisco. Total registration for 1914-15 was 133, graduates, 14. The forty-third session begins Aug. 13, 1915, and ends May 17, 1916. Class A.

Loma Linda, Los Angeles.

College of Medical Evangelists.—Organized in

1909. The faculty numbers 11. The first class graduated in 1914. The course extends over four years of nine months each. Two years of college work are required for admission. The total fees each year are $136; matriculation fee, $5, payable but once; graduation fee, $10. President is Dr. Newton Evans. The total registration for 1914-15 was 63; graduates, 12. The seventh session begins Sept. 26, 1915, and ends June 15, 1916. Class C.

Los Angeles.

College of Physicians and Surgeons, Medical Department of the University of Southern California, 516 East Washington street.—Organized in 1903, first class graduated in 1905; became Medical Department, University of Southern California, Aug. 11, 1909. The course covers four years of nine months each. One year of collegiate work is required for admission. The faculty consists of 23 professors and 57 associate professors, lecturers and instructors, a total of 80. The fees for the four years, respectively, are $185, $182, $160 and $175. The Dean is Dr. Charles W. Bryson. The registration for 1914-15 was 132; graduates, 25. The next session begins Sept. 6, 1915, and ends June 7, 1916. Class B.

Oakland.

Oakland College of Medicine and Surgery, Thirty-first and Grove streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 44. The course covers four years of nine months each, and the classes are limited to ten students each. The total fees for each of the four years, respectively, are $185, $190, $150 and $150. The Registrar is Dr. Edward N. Ewer. The total registration for 1914-15 was 12; graduates, 4. The fourteenth session begins Aug. 16, 1915, and ends June 1, 1916. Class B.

San Francisco.

College of Physicians and Surgeons, 344 Fourteenth street.—Organized in 1896. The first class graduated in 1897. The faculty numbers 30. The course covers four years of nine months each. The fees for each of the four years, respectively, are $165, $160, $160 and $185. The Dean is Dr. L. W. Spriggs. Registration for 1914-15 was 62; graduates, 8. The nineteenth session begins Sept. 6, 1915, and ends June 8, 1916. Class C.

San Francisco-Palo Alto.

Leland Stanford Junior University, School of Medicine, University Campus, Palo Alto, and Sacramento and Webster streets, San Francisco.—Organized in 1908 when, by an agreement, the interests of Cooper Medical College were taken over. The faculty consists of 42 professors and 54 lecturers, assistants, etc., a total of 96. Three years of collegiate work are required for admission. The course covers five years of nine months each, including a year of practical or intern work. The total fees for the first four years, respectively, are $160, $155, $150 and $150. The Dean is Dr. R. L. Wilbur, San Francisco. The total registration for 1914-15 was 95; graduates, 16. The sixth session begins Sept. 1, 1915, and ends May 22, 1916. Class A.

CANNING COMPOUNDS DANGEROUS TO HEALTH.

Office of Information, U. S. Dept. of Agriculture.

Information has come to the Department that the canning season has brought the usual demand on the part of housewives for salicylic acid and boric acid. These preparations are sometimes sold in the form of powder under various trade names and are recommended by the promoters for use in preserving canned goods in home canning. In the directions for use the housewife is told to fill the jar with the fruit or vegetables, cover with water, and add a teaspoonful of the preserving powder. While it is true that these compounds may retard the decay of the fruit or vegetable, it is pointed out by the experts of the Department that their use may be attended by serious disturbances of health. Salicylic acid is well known as a poisonous substance, and one of the evils which may accompany its use is derangement of the digestion. It is therefore plain that its extensive use in food may lead to disturbance of digestion and health.

The Federal Food and Drugs Act prohibits the use of harmful preservatives in foods that enter interstate commerce. The food law of nearly every state in the Union forbids the sale within the state of foods that have been preserved with harmful substances. Neither the Federal or state food laws apply to foods that are canned in the home and consumed there. It would seem, however, that the housewife would not knowingly use, in the foods she provides for her family, substances that she could not use in foods for sale without violating the law, because these substances are injurious to health.

Artificial Preservatives Not Necessary.

Fruits and vegetables can be kept indefinitely if they are sterilized by heat and properly sealed, and there is no excuse, in the opinion of the experts of the Department, for running any risk by using preserving powders, which may be injurious to health. The use of such powders in addition to the possible injury to health encourages uncleanly or careless work in canning. Reliance is placed in the efficacy of the preserving compound instead of upon cleanliness and heat.

The Department has issued bulletins that give specific directions for the preserving and canning of fruits and vegetables without the use of preserving powders or canning compounds. These bulletins may be obtained without cost from the Department of Agriculture. Application should be made for Farmers' Bulletin, No. 203 on Canned Fruit, Preserves, and Jellies, and No. 521 on Canning Tomatoes at Home and in Club Work. Also Forms N. R. 22, N. R. 23, N. R. 24, N. R. 34 and N. R. 37 of the Office of Extension Work, North and West, States Relations Service.

NEW MEMBERS.

Wharton, Chas. G., Los Angeles.
Reiche, Cecilia, Los Angeles.
Pomeroy, J. L., Monrovia.
McNeil, Olga, Los Angeles.
McNeil, Lyle, Los Angeles.
Patric, Gladys E., Los Angeles.
Zochert, L. W., La Mesa.
Alexander, Chas. Bee, Alhambra.
Fishbaugh, E. C., Los Angeles.
Collins, Foster K., Los Angeles.
Boyer, Horace Russell, Glendale, Cal.
Hammon, Glenn M., Los Angeles.
Peters, Lulu H., Los Angeles.
Kahn, Maurice Guthman, Los Angeles.
Crane, Walter R., Los Angeles.
Harbaugh, Dorothy F., Santa Ana.
Moss, R. E., Riverside, Cal.
Jorgenson, N., Fresno.
Young, C. I., San Francisco.
Tweedie, Arthur Maurice, Newport Beach, Cal.
Ehle, H. B., Bieber, Cal.
Hoskins, G., Ferndale.
Oldenbourg, Louise A., Contra Costa, Cal.
Hyde, O. C., Lincoln, Cal.
Couture, A. N., Auburn, Cal.
Bacigalupi, David Eugene, San Francisco.

DEATHS.

Ross, T. D., San Luis Obispo.
Tyler, Hoell, Redlands, Cal.
Thompson, J. Emmett, San Francisco.
Wilson, Frank Pope, San Francisco.
Chenoweth, W. J. (died in Decatur, Ky.).
Sinclair, O. W., Eureka.

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VOL. XIII NOVEMBER, 1915 No. 11

EDITORIAL NOTES

THIS REALLY HAPPENED.

As you know, it is customary for detail men when they visit your office to ask for one of your cards. This they send to the home office as confirmatory evidence of the fact that they have called upon you. A certain detail man called upon a certain surgeon in a certain city, and as per custom, departed with one of the surgeon's cards. It was inscribed "John Doe, M.D., F.A.C.S." The detail man then called upon another physician with whom he was well acquainted, and in the course of conversation said he had "met up with a new one." Thereupon he brought out the card of John Doe and, pointing to the mystic letters, "F.A.C.S." said: "Is Dr. John Doe a Christian Scientist?" There are occasional bright spots in a world otherwise filled with gloom and conflict!

ON CRITICISM.

Some thoughts on criticism in general have been suggested by the fact that a number of people in Sacramento have more or less heatedly taken the editor to task for an editorial note which appeared in the JOURNAL, criticizing the policy of a city in turning out a full-time health officer, and presumably a well-trained one, as he was, we understand, picked in competitive examination. The point is that the editor was attacked for publishing certain criticism; there was no discussion of the *thing criticized!* If one is to be personally attacked for uttering words of criticism, it would seem logical to show first that the *thing criticized* is essentially right and that hence the critical words were improperly used. If a criticism is *just,* it is no argument against it to berate the critic. If it can be shown that it is *not* just, then the critic should most certainly be taken to task for his improper and unwarranted use of critical words. It may be conceded that no one likes to be criticized and that when anything *is* criticized, someone is sure to be offended thereby, either rightly or wrongly. If no one and nothing was ever criticized; if errors and mistakes and misdemeanors were never pointed out, what a chaotic world we would live in, and how impossible life would become! One offended person who offered no single argument against the justice of the attitude of the critic, said that it was not the matter but the language that was objectionable. How can anything be criticized in language that is unobjectionable? And furthermore, if a thing is to be justly criticized, should not the language be as clear, as direct, as forcible as is possible, in order that the thought may be carried home and easily assimilated by the reader? It would seem so. This JOURNAL, since its very first issue, has criticized many things and has stirred up many rows. But it has not been entirely destructive; it has been constructive as well, and in nearly every instance where such criticism has been made, some constructive suggestion has been offered. The constructive side of the criticism in the case of the Sacramento incident, was in supporting the sound sociological principle that the health of a community is best secured by having a full-time, well-trained health officer; one who has no divided duty and does not serve two masters. What "the college" will become, no one knows; but there was a constructive side to the criticism of "the college" when it was formed. The argument on that was, that the good desired could be more surely secured by working through existing and permanent educational channels; that a personal and proprietary educational enterprise is an anachronism; that it is against the trend of educational development. Time alone will show the right or the wrong of this particular thing. To attack the editor does not alter the right or the wrong of the thing mentioned. It is often discouraging to have personalities injected into a discussion of things or conditions as such. And it certainly is much easier to go through life openly admitting that all things are possible and that everybody is right!

FRAUDS IN MEDICINE; LEARN ABOUT THEM.

The price list of the various books and pamphlets relating to frauds and fakes in medicine, quacks, quackery, fake cures, fake springs and the like is issued by the American Medical Association and may be had for the asking. Send for a copy and note the range of subjects which the Propaganda Department of the Association has covered in these publications. Most of them cost but a few cents and are really sold at approximately the cost of publication. Quite frequently we are asked about this or that fraud or fake undertaking or the like; practically all of them have been written up by the Association and can be had in pamphlet form. Send for this price list, which is really a catalog of the various fakes and frauds exposed.

ON ACCOUNTS.

On another page will be found the reports of the two firms of certified public accountants which audited the accounts and affairs of the Society for the last year—1914. Ordinarily, but one firm does the work, but this year it was thought well to have one check up the other and thus make assurance doubly sure. As all of our 2,500 members cannot visit the home office of their Society and see what is going on, it seems a good time and place to explain a little as to the nature of the work and the way the accounts and the affairs are handled. In 1905, the Secretary put in a very simple system of accounts which the then auditor said was the best that could be devised for our business; it had to be simple, for the Secretary had to keep the books and—he is no professional bookkeeper! At the same time, the Secretary introduced, and the House of Delegates passed, resolutions requiring the Secretary to furnish a bond in the sum of $2,000 and that the accounts should be audited by a certified public accountant. These things he did for his personal insurance, as it were, for anyone who handles money is always open to the charge of questionable handling thereof. All of these accounts, bank statements, canceled checks, vouchers and auditors' reports are saved and on file in the safe deposit vaults.

All money that comes in in any amount of $1 or more, is acknowledged by letter and a carbon copy filed. This requires the checking or it by at least two other persons beside the Secretary and also would make it possible to audit the accounts, within $10 or less for the year, from the letter files. Every cent that goes out is paid by check and before the check is signed, the voucher to which it is attached must be looked over and signed by two members of the Council forming the auditing committee of the Council. The Secretary has a petty cash fund of $200 to pay small bills that may be urgent, or cash payments such as express, stamps, and the like. But each month all of these items are entered upon a voucher, presented to the auditing committee and signed, before the check covering them is issued. All bills are paid from month to month by entering them upon the voucher and making the attached check to correspond; thus the auditing committee has before it the actual bills. When there are no bills, as in payments for salaries, rent and the like, the purpose for which the check is to be drawn is written in the voucher. This plan obviates the necessity of keeping many accounts; it turns everything into a cash-book account system. It frequently happens that there are some bills unpaid at the end of the year, and these are the only liabilities against the Society and are taken up in the early part of the next year. Our assets at the end of a year are the cash on hand, such fixtures and supplies as may be on hand, and our accounts due from advertisers. The last is an uncertain amount, for some accounts due may never be paid and some which one might consider good, and as assets, are never paid; whereas some that seem hopelessly bad, may be paid in full, in time. On the whole, the years have shown that following a liberal policy with advertisers, has resulted in a constantly growing business and a very small loss from unpaid accounts. Last year, less than $200 was charged off as hopelessly bad. The object has been, in planning and conducting this matter of accounting, to make everything as simple as possible and so clear and plain that anyone could step in and in a few hours, understand it all and see for himself exactly what the condition of the Society's affairs really is at that time. As no names of members are enrolled unless the money is sent in with the name, the county societies never owe us anything and so there is no need to keep a double entry account with each society; it is all cash. If the cash comes with the name of one elected, he is enrolled as a member; if it does not, he is not so enrolled; nothing is ever owed to us for membership assessment; it is cash received and so entered. Our heaviest expense is for legal services in defending the constantly increasing number of suits against physicians for damages for alleged malpractice. We have already paid out nearly $9,000 this year and it will run well over ten before the end of 1915. The business is constantly growing in magnitude and in importance and requires more time and thought and work than you would suppose. But the effort is to keep the machinery simple and effective.

ROCKEFELLER FOUNDATION AND HOOKWORM.

The Rockefeller Foundation has recently issued an annual report, largely dealing with its International Health Commission, and purposes hereafter to issue such reports each year. The work of this one branch of the Foundation is stupendous, as may be judged by a fragment taken from the announcement sent to the JOURNAL:

> The resolution creating the Commission assigned to it two tasks: (1) "to extend to other countries the work of eradicating hookworm disease as opportunity should offer"; and (2) "so far as practicable to follow up the treatment and cure of this disease with the establishment of agencies for the promotion of public sanitation and the spread of the knowledge of scientific medicine." In keeping with this definition of purpose the Commission has directed its initial efforts to the first and more immediate task of extending to foreign countries work for the relief and control of *uncinariasis* or hookworm disease.
>
> The relief and control of this one disease is an undertaking of enormous magnitude. The infection belts the globe in a zone about 66° wide, extending roughly from parallel 36° north to parallel 30° south. Practically all countries within this zone are infected. Of the 1,600,000,000 people inhabiting the globe, about 900,000,000 live in countries where the infection is prevalent.

TEST YOUR WASSERMANN!

There is a story about a man, upon whom a certain rude community had imposed the duty of dispensing justice; he declared his intention of hearing only one side of the case; "for," said he, "to hear two sides would have a tendency to confuse the court."

Such an evasion of the problem resulting from a conflict of testimony is not always feasible in the practice of medicine; and we can not help wondering how widespread is the trouble of mind which the practitioner suffers from the contradictory reports issued by workers who make the Wassermann tests. To stick to a single serologist would secure the mental repose which the backwoods justice was so anxious to preserve; but we fear that a regular assumption of one's Wassermann worker's infallibility would not be compatible with one's duty.

Not that there are no laboratories which profess their finding of a "positive Wassermann" to be an unerring indication of syphilis. From large and influential institutions has come the declaration that no divergence has been found between their findings and the clinical facts in a numerous and varied series of cases. Yet, while the very great value of the test is universally admitted caution was early recommended in view of the proportion (however small) of non-specific reactions and especially on account of the discrepancies which were observed in the results of different workers.

To these contradictory results we called attention in these columns early in the era inaugurated by Wassermann's discovery, and also to Wassermann's disavowal of responsibility for the results of any departure from his method. But disagreements in the findings are still published, and more frequently no doubt the vexed and puzzled practitioner refrains from printing his complaint but confides his grievance to the ears of his sympathizing fellows.

It is an extreme case when a laboratory is divided against itself; but it is related that in one instance the blood of one and the same person was divided into two portions and the two, labeled with different names, sent to the same laboratory, whence issued a report to the effect that one-half of the blood was "negative" and the other "positive."

Of course, one explanation may be that two different antigens were employed in such a case. This, or some other, difference in technic is the cause of the different results supplied by different serologists on the fluid of the same patient. We do not find that the error (and one of the divergent results must be erroneous) is due to inattention or carelessness, but to some defect inherent in the method employed. For when a repetition of the test is demanded each disputant adheres to his previous result, whether the same or a new portion of fluid be used, whether the interval between the original reaction and its repetition be short or a matter of months.

One lesson to be learned from this, if the lesson needed learning, is that the physician must not abdicate too readily in favor of the laboratory worker, but must keep his clinical head. Furthermore, a laboratory method convenient for the use of the practitioner himself, to serve as a check upon the serologist, is very much desiderated. Such an one seems now to be supplied in the Herrman-Perutz test.

This is a precipitation test. It was mentioned from time to time in various journals and its usefulness commended. It was tried here, but difficulties were encountered, which were apparently in large measure due to the very inadequate description of the details supplied by the authors; for, while the details are comparatively simple they are minute and fundamentally important.

In an article in the *Berliner Klinische Wochenschrift* of August 23, 1915, Zadek confirms the statements of others as to the value of the Herrman-Perutz test. He has tried it in 1000 cases along with the Wassermann method. A positive reaction is obtained in primary lesions before the Wassermann will give it, and it is to this fact chiefly that is due the great preponderance of Herrman-Perutz "positives" over the Wassermann (72.7% of the former to 51.2% of the latter) in a material comprising syphilitic affections of all stages. The control examinations, however, yielded a result in favor of the Wassermann method by 5 to 6%, non-specific reactions having been found most frequently in advanced tuberculosis of the lungs, carcinoma, typhoid, sepsis and especially in uremia and eclampsia. Nevertheless Zadek believes that the Herman-Perutz test should be as extensively used as the method of deviation of the complement, not to displace the Wassermann test but to be valued as a complete equivalent. Neither is considered absolutely specific, but the "clinical specificity" has been proved to be sufficient for practical purposes. The advantages of the precipitate method consist in the simpler conditions for performing the test, in the earlier revelation of syphilis and in greater resistance to the influence of treatment.

Zadek sets forth minutely all the details of the procedure, with precautions as to the sources of error. Many may now be induced to try the Herman-Perutz method who were repelled by the complexity of the Wassermann; those who have been using the Wassermann method, the original or one of its modifications, would seem to be under an obligation to corroborate or refute the assertions in favor of the other. Let us hope that a sufficient approach to unanimity will be achieved in these investigations so that there will result nothing like a "tendency to confuse the court."

RIGHTS AND DUTIES UNDER HEALTH LAWS.

The following extracts are taken from the Monthly Bulletin of the Los Angeles Health Department for August 1915. It would not be a bad idea if every physician had some of these suggestions printed on slips and placed on the waiting-room table; it would help disseminate the simple knowledge and get the people to understand what all public health rules are—measures for their own good:

The health laws of your city have been made to protect you from disease and from early death. They are to make you live long. They are the result of long experience. They are to protect you and your family.

The city officials are your representatives. When they direct you to do certain things and not to do certain other things, it means that you and the people who live next door and the people who live on the next street, have made certain rules and regulations through them. Your representatives have made these in order to protect you; they have made them because such rules are necessary. Naturally you will want to live up to them.

If Health Laws are really to make more healthful conditions, you should do your share. You should do what the law says. You should urge your friends to do so as well.

Contagious Diseases.

Contagious diseases are diseases that are "catching." They may spread quickly from the person who is sick to other people. Then these people also get sick from the disease. You should send to the Health Department the names and addresses of all persons either in your own family or in any other who may have any of the following illnesses:

Diphtheria (croup), Tuberculosis, Chickenpox, Rubella (German Measles), Epidemic Cerebro-spinal Meningitis, Scarlet Fever, Infantile Paralysis, Smallpox, Measles, Typhoid Fever, Mumps, Whooping-cough.

If you do this the Department of Health may be able to prevent the disease from spreading to other people.

Signs—In a few of the common "catching" diseases the Department of Health puts a warning sign on the front door of the home in which the disease occurs. This is a sign that says there is a contagious disease in the house. It may seem unpleasant to have a sign on the front door, but this is only to protect you. If your neighbor does not have such a sign on his door when there is a contagious disease in his home you may not know that the disease is there, and you will not be able to keep your children from playing with those who have it. It is very dangerous to allow children to play with those who have a contagious disease.

SANITATION POSSIBILITIES.

It seems well nigh impossible to make the people see what can be done in saving their health and their lives by proper sanitary measures, even in the face of such tremendous examples as Cuba, the Canal Zone, and districts where large government undertakings are in progress. To change, in a few months, the pest-hole of the world—the Isthmus of Panama—into one of the healthiest places on the globe, one would think would be of sufficient importance to make everybody in every community sit up and take sufficient notice to demand the like conditions in his own "home town." But not so. The Canal Zone health history has been repeatedly written up and many articles on it published in all kinds of public press. Similar examples of what can be done in conserving life and health as against preventable disease are to be found in many places, for the looking. In Idaho, near Boise, for more than four years, something like 20,000 men were employed in building the great Arrowrock dam, whose completion was celebrated October 4th. There was not a single death from any contagious disease, during all this time, and but one case of typhoid, which probably originated outside of the camp. Intelligent sanitary rules and regulations were made and rigidly enforced and the work progressed without a hitch and without disease. Incidentally it may be said that the project, which it had been estimated would cost about $7,500,000, was actually completed at a cost of about $5,000,000. So much for what can be done under proper sanitary control; but the citizens of our communities prefer dirty diseases to cleanliness and health. And they don't understand how many actual dollars the healthful conditions save for them!

IMPROVING CONDITIONS.

Dr. G. C. Simmons, Health Officer of Sacramento, has kindly sent to the Journal copies of the monthly report of the Health Department of that city for August 1914 and August 1915. It is not possible to use the percentages for exact comparison, for the reason that the 1914 report bases its calculations on a population of 62,000 whereas the 1915 report uses for computation a population of 75,000; it does not seem possible that the city grew in population to the extent of 13,000 in one year. However, certain figures are illuminating. In August 1913, the deaths per thousand were 18.01; in 1914, 13.74; in 1915, 12.70, showing a steady decrease. It is also to be noted that the number of actual cases and of deaths from typhoid has continued to decrease. Sacramento and the Sacramento Valley, have been rather notorious for typhoid for some years, but if the remedial public health measures which were adopted some time ago are continued, we may hope to see this entirely changed. It would be wise for the authorities of Sacramento and vicinity to urge the use of anti-typhoid inoculations, through educational effort. This would materially aid them if they can secure public co-operation.

ANOTHER "CURE FOR CANCER."

A correspondent has written to the JOURNAL asking about the new "cure for cancer" so splendiferously written up by "Henry Smith Williams, M.D.," in a monthly magazine. As a reflection upon the way some of the statements were gathered and what they are really worth, we append a letter from Dr. J. W. Vaughan to the Journal A. M. A.:

To the Editor:—The following statement of facts in *The Journal* is imperative because of the unwarranted use of my name in the exploitation in a popular lay periodical of a preparation for the treatment of inoperable cancer.

Some nine weeks ago I was informed by Dr. S. P. Beebe of New York City that he had a preparation to which the name of "Autolysin" had been given which in his opinion was of benefit in the treatment of inoperable malignancy. He stated that it was his desire to have men who have made a special study of clinical cancer work with the material, so that he might more quickly and more definitely arrive at conclusions concerning its ultimate value.

Believing that anything that offers aid to the sufferer from inoperable cancer should be given a fair trial, if it originates from a competent authority, I was glad to co-operate in testing out the merits of this preparation and, after starting its use, wrote to Dr. J. Wallace Beveridge, an associate of Dr. Beebe's, a letter in which I described the class of cases in which I had begun their treatment. This letter was a personal communication from one physician to another and at the end of the description of each case a few comments were made concerning any change in the patient's condition either observed or thought to have been observed.

Entirely unknown to me, this article was quoted in the article in the magazine above referred to, and was so abstracted as to make it appear to be a testimonial. Inasmuch as my letter was written within one week after beginning trial of "Autolysin" and only to show the class of cases in which it was being employed, its use in this manner was deliberately misleading.

Again, inasmuch as my letter was a personal one from myself to Dr. Beveridge, its use must have occurred with the knowledge of someone of their office force.

Because of the unjustifiable use of my name in connection with this unwarranted and unethical exploitation, I will deem it a great favor if you will give space to the above.

J. WALTER VAUGHAN, M.D., Detroit.

PLAGUE HISTORY.

Since publishing the brief note in regard to the position of the State Society and its direct influence in starting the campaign against plague in San Francisco, some years ago, our attention has been called to an omission by the author of the article mentioned. The *Occidental Medical Times*, edited by Dr. James H. Parkinson, Sacramento, was then alive—and very much alive, for Dr. Parkinson, as editor of that publication and as a member of the Council of the State Society, was extremely active in urging public support of the work and publicity of the facts in the daily press. It may not be clearly remembered after the passage of these years, just who was most active or most responsible for what happened, but it is certain that no two persons were more thoroughly roused or more active in their attacks upon the lethargic conditions of the time, than were the President of the Society, Dr. Evans, and Dr. Parkinson, of Sacramento.

LESSONS FOR LAYMEN.

Not the least valuable part of the work of the American Medical Association is that which deals with the effort to educate the public on public health matters. This work takes several directions, public lectures for which series of lantern slides are prepared, placards, a newspaper service and series of pamphlets on a number of subjects. One of the latest is on Scarlet Fever, by Ludvig Hektoen, M.D., written expressly for the lay reader and very clearly and concisely in ordinary language, giving a valuable account of this disease with much information which it would be well for all people to know. This little pamphlet, as well as others in the series, may be had by application to the State Board of Health, or to the American Medical Association, 535 North Dearborn street, Chicago.

EXTRACT OF LIVER, A FUTURIST REMEDY.

To be a success, a proprietary must contain something new, or at least something regarding the therapeutic value of which the physician is ignorant. A remedy which fulfills this requirement is Filudine, a proprietary which has recently been investigated by the Council on Pharmacy and Chemistry (see "Items of Interest," this issue). Filudine contains as its chief ingredient extract of liver along with extract of spleen and pancreas and thiarfeine which used to be "thiomethyl arsinate" but now, according to the manufacturer, is "thio-cinnamate of caffein." The vast possibilities of extract of liver are appreciated when we learn that it contains "iron (the ferruginous function of the liver) phosphorized azatous bodies, lecithin, jecorin, glycogen, fats and ferments, such as proteolytic ferments, and the ferments of nucleic substances (nucleases, adenases, xantinoxydases, glyoxylases, and an uricolytic ferment; the ferments of ethers and fats, of hydrates, carbon, catalases and oxydases." We wonder if a cat's fondness for liver has any relation to its proverbial "seven lives."

NO DOCTORS NEEDED—USE "AKOZ"!

A correspondent has sent us a circular relating to "Akoz" with a letter from a patient saying that now he no longer needs the services of his physician—or any other physician—now or at any future time. "Akoz" is a grayish colored, very hard rock. It is sold powdered very fine. It contains no chemicals save such as are ordinarily found in rock of its class, and traces of certain metals. It is very slightly soluble and has a very mild alkaline reaction. It has been repeatedly tested for radio-activity, but is absolutely devoid of it. Yet this is what the circular says it will cure: All stomach troubles; bowel, liver and bladder troubles; rheumatism, gout, lumbago, sciatica, neuralgia and neuritis; Bright's disease; diabetes; pyorrhea and toothache; catarrh of the nose and throat and of the bladder; all skin diseases ("The most common skin diseases are eczema, pimples, scalp rashes, barber's itch, ringworm and bites and stings of insects"); poison oak and sunburn; hemorrhoids, pruritis, ulcers and inflammation of the rectum; enlarged prostate; burns, sprains and bruises; tonsillitis; chilblains; and it is good as a "tonic"! What more do you want? Just get a chunk of rock and you can cure anything! Surely the world is well bespattered with fools!

SCARLATINA:

A Résumé of Present-Day Knowledge.

By W. W. BEHLOW, M.D.

Scarlet fever is an acute infection of variable intensity. It may be so serious as to endanger the life of the patient, and again the symptoms may be so mild that the presence of the disease may not be recognized. While severe and mild cases do occur simultaneously in the same family, yet it is one of the characteristics of the disease that the virulence of the infective agent varies in different epidemics.

The disease may be found in any large city at any time of the year, although it occurs most frequently in the winter and spring and it is at such seasons when the epidemics exist. The personal contact of the susceptible individuals which is naturally more frequent in the wet and cold months probably accounts in large measure for the prevalence of the disease at such a season.

There appears to be a natural immunity to the disease in many people and this is especially true for adults, who not having had the disease in childhood may apparently expose themselves with less danger of infection than would be the case in children. Young infants are more immune than are children of greater years. The mortality rate is very high between six months and five years. The following figures by Barasch [1] give the mortality according to age: 50.7% under the 5th year; 31.4% between 5 and 9 years; 9.9% between 10 and 14 years; and 2% between 11 and 19 years. One attack usually confers immunity but it should be borne in mind that second attacks may occur.

Etiology. The causal agent of scarlet fever is not known. Through the almost constant association of the streptococcus, it has been suggested that some form of this organism was the cause of the infection. This, however, has never been proven. Infection occurs through contact with the secretions from a patient and therefore it is during the early stage of the disease that scarlatina is most frequently transmitted. A discharging sinus or a chronic suppurating otitis media can also transmit the infection. The scales from the desquamating skin do not carry the infection unless the dried secretion of the naso-pharynx or of a discharging sinus has contaminated the skin. The incubation period is from two to seven days, oftenest two to four.

Symptoms. The onset is usually sudden with fever and a chill in older patients, or vomiting or convulsions in young children. The throat is sore and examination will reveal an intense angina of bright red color, of the entire faucial ring. On the soft palate and extending to the hard palate there is seen a punctate eruption, the forerunner of what is to appear on the skin a little later. In an atypical case the throat signs may be very mild and almost absent. At the end of the first day or on the second day, there appears on the upper chest and in the axillae, a fine punctate erythema. The intervening skin may present a fine blush or it may be normal in color. The rash increases in the extent of its distribution until it covers the entire trunk and extends upward toward the head and down the thighs. Immediately about the mouth there is usually an area of pallor. The rash is more accentuated in the axillae, groin and along the flanks. There are frequently on the trunk minute vesicles filled with clear or slightly turbid fluid. At the height of the eruption the skin is hyperemic, the color disappearing upon pressure and returning instantly after the pressure is removed. Certain signs are worthy of note. Pastia's lines are lines of brownish pigmentation in the folds of the antecubital fossa and popliteal space. The Rumpel-Leede's phenomenon first described by Rumpel in 1909 and later by Leede [2] in 1911, is suggestive. It is almost always present in the disease and although it also occurs in other conditions, its absence may aid in ruling out scarlet fever. An Esmarch bandage is placed around the upper arm just above the elbow, thus causing a passive hyperemia. After several minutes the band is removed, and close examination of the skin of the antecubital fossa will reveal fine punctate hemorrhages in the skin, if the test is positive. During the first day the tongue is heavily coated but gradually the swollen reddened papillae appear through this coat. Some observers call this the strawberry tongue. Others, however, prefer to call the later condition when the tongue is red and the papillae stand up prominently, the so-called strawberry tongue. This latter condition is also known as the raspberry tongue. The glands throughout the body are enlarged, especially those of the anterior cervical region. During the height of the eruption there may be considerable pruritis.

Blood. A polymorphonuclear leukocytosis is present early in the disease, increasing during the

stage of eruption and declining with the fading of the rash. The eosinophiles are diminished while the rash is at its height. The fact that the leukocytes return to normal after the disappearance of the rash is very important, as a subsequent increase in cells points to a complication. In 1911, Doehle[3] reported finding certain bodies in the leukocytes of scarlet fever patients. These inclusion bodies have since been reported by numerous observers who agree that these bodies are found in the majority of scarlet fever cases and not in the other exanthemata.

Course of the Disease. The temperature continues high during the efflorescent stage and as the rash fades the temperature comes down by lysis. There may be slight delirium during this stage. About one week after the first appearance of the efflorescence, the desquamation begins. This desquamation is of the lamellar type. It is most characteristic at the tips of the toes and fingers where a decided break in the skin is noticed under the nails. Desquamation may last from one to three weeks.

The urine may show a small amount of albumen and a few casts during the height of the fever. It should return to normal with the beginning of convalescence. It is frequently decreased during the prodromal and efflorescent stages and increased during desquamation. If there are no complications, the further progress is uneventful.

Complications. These usually occur before the fourth week but may appear considerably later. Nephritis may exist from the start but usually appears between the second and fourth weeks. The signs are those of a typical acute infectious nephritis. Otitis media may occur very early or very late in the disease. Suppuration of the glands of the neck occurs occasionally. Septic joints are not very common and are more frequent in youths and adolescents according to Barasch.[4] Endocarditis is not especially common and is usually mild. There is always a slight grade of myocarditis in scarlet fever and this condition may almost be called a part of the picture. Septicemia is a very grave complication resulting, in the majority of cases, in fatal termination of the disease. Broncho-pneumonia is not uncommon.

Treatment. Rest in bed, milk diet, warm baths, and careful nursing are the principles of treatment. The patient should remain in bed at least three weeks and in the complicated cases for a longer period. The diet may be figured on a definite caloric basis as is now done in the Boston City Hospital. In bathing, care must be exercised that the patient be not exposed to cold. Even having the patient near an open window may cause the development of nephritis. If kidney trouble does occur, it is treated according to the usual methods of therapy in such conditions. Uremia is combatted by hot packs, catharsis and venesection. Otitis media is treated as is usual in such cases. A thorough incision of the drum in the purulent inflammations of the middle ear, will frequently cause the rapid subsidence of the symptoms.

The use of streptococcus vaccines both for immunization and for therapy, has not proven to be of advantage. Serum from convalescents as suggested by Barker[5] of St. Louis, and by Axenow[6] may prove of advantage in the future. The dangers of such therapy may readily be appreciated.

In the ordinary case the throat and mouth should be carefully cleansed daily. In the severe septic cases this is a very important feature of the treatment. Mild antiseptic sprays and lavage of the throat with saline solution must be done several times a day in the very severe cases. The swollen glands of the neck are best treated by ice collar. When pus is evident, free incision is indicated. The pruritis during the height of the rash may be relieved by rubbing with cocoa butter.

Conclusions. Scarlatina is most frequent in childhood. It is very fatal in young children. It is transmitted by the secretions and not by the scales of skin, unless these are contaminated by secretions. Vaccines have not proven to be of value in prophylaxis or treatment, except in those sequelae of septic origin, where chronic conditions may be affected by vaccine as in any other condition of similar nature occurring independently of scarlet fever.

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ORIGINAL ARTICLES

THE MODERN DIAGNOSIS OF HEMATURIA.*

By MARTIN KROTOSZYNER, M.D., San Francisco.

Goethe in his immortal Faust terms blood a juice of extraordinary character, and bleeding from any source or organ is generally considered an awe-inspiring event among laymen; physicians, too, look upon hemorrhage, even in small or only microscopically recognizable quantities, as a serious, and if continuous, as an ominous symptom, from the early recognition and correct interpretation of which the health and comfort and, not rarely, the life of the patient may depend.

The successful perusal of the huge and, at first glance, unwieldy subject, as presented in the title of this paper, is, in the brief space of time at my disposal, only feasible through careful classification of its different phases. We will, therefore, endeavor to answer three fundamental questions as regards the occurrence of hematuria: How and by what means is the presence of blood in urine determined? Where is the bleeding focus localized? What is the etiology and underlying pathological process of hematuria?

Let us consider, at the outset, the most important question pertaining to the diagnosis of hematuria: How and by what means is the presence of blood in urine determined?

Larger amounts of blood are, of course, easily recognized by mere ocular inspection. In this connection a few practical observations may not be amiss. The color index of blood being very strong, a small amount of it suffices to give the urine a bright red discoloration. The conclusion, therefore, is obvious, that in the greatest majority of cases red-colored liquid urine merely consists of urine and one can safely say that the amount of blood dissolved in urine is, as a rule, overestimated and that this type of hematuria assumes dangerous aspects only in case it is continuous during a long period. The really grave form of hematuria, on the other hand, as characterized by blood in macroscopically clear urine is not sufficiently appreciated and often overlooked by the general practitioner. I would, therefore, urge upon a careful microscopic examination of the urine of every patient, in whom the remotest suspicion of an affection of the urinary tract exists. In the centrifugalized sediment will, thus, readily be demonstrable either fresh or crenated blood cells or the sharp-rimmed rings known as blood-shades, or colorless minute microcytes.

If microscope and centrifuge are not available and, especially at the bed-side, the presence of blood can be ascertained on the basis of the simple chemical Heller's blood-test by adding an alkaline solution to urine in a test tube and heating, by which, in the presence of even a very small amount of blood, a brownish-red precipitate is obtained, while its color in the absence of blood, is grayish-white. The positive result of this test should, though, be afterwards controlled by microscopic evidence.

The localization of the bleeding focus, formerly a matter of mere speculation and a problem of the utmost difficulty, particularly as regards bleeding from the upper urinary tract, is to-day easily feasible by means of our precise modern methods of examination.

The source of bleeding may be located in the urethra, the prostate, the spermatic cord and vesicle, the bladder, the ureter, the renal pelvis and finally in one or both kidneys.

A hemorrhage from the anterior part of the urethra can be recognized by oozing of blood from the external meatus, while blood originating from a focus in the posterior urethra, owing to the tight muscular valve provided by the cut-off muscle, will flow back to the bladder. The differentiation, therefore, of a hemorrhage of the posterior urethra from that of the bladder is, if abundant, often impossible. In case though, only scant bleeding occurs, and if the focus is located at the extreme end of the posterior urethra, at or near the bladder entrance, then the diagnosis may be feasible on the basis of the two-glass method, the urine in the first glass being clear, while that of the second glass will present a sanguinolent and cloudy appearance. Of particular diagnostic import, in connection with hemorrhage from the posterior urethra, is the appearance of a few drops of pure blood at the end of micturition, the so-called terminal hematuria, which is always indicative of a bleeding focus at or near the bladder entrance.

For the determination of bleeding from a focus beyond the urethra, and especially from the upper urinary tract, the introduction of the cystoscope is indispensable. Through cystoscopy we are now enabled to ascertain, by ocular inspection, whether the source of hemorrhage is located somewhere in the interior of the bladder or in the prostate, and whether blood is eliminated from the right or left ureter. In the presence of negative cystoscopic findings as regards a focus in bladder or prostate we may safely exclude these organs from our diagnostic calculations.

Ureteral matoscopy alone suffices in cases of severe hemorrhage from the upper urinary tract, which is characterized by a bright red spurt. In the presence, though, of moderate or small hemorrhage the ureteral spurt, as a rule, will assume a more yellowish or indistinct color, which cannot be differentiated from that of the bladder fluid and therefore ureteral catheterization must be resorted to. In the presence of unilateral hematuria clear fluid will, by this means, be obtained from one and blood-colored urine from the other ureteral catheter.

The local diagnosis by means of ureteral catheterization is often complicated and difficult. Every cystoscopist knows that the introduction of a catheter into the narrow ureteral canal is fraught with more or less traumatism followed by microscopic or, not infrequently, macroscopic appearance of blood. The differentiation of this artificial from a spontaneous hematuria is, in most instances, feasible on the basis of the microscopic findings of

* Read before the Forty-fourth Annual Meeting of State Society, Santa Barbara, April, 1914.

the two sediments, pale blood disks and especially blood-shades pointing to a pathological focus on one side in contradistinction to the fresh red or crenated blood corpuscles appearing in the bloody urine due to traumatism. If, moreover, the catheters have not been carried through the whole length of the ureteral canal to the pelvis, it is sometimes only necessary to push them a few centimeters further up, and away from the point of suspected traumatism, when the blood-color of the urine on the one side will either disappear entirely or be perceptibly reduced in intensity, while it will remain equally intense in the urine obtained from the diseased side. The diagnostic uncertainty due to admixture of blood in renal urines caused by diapedesis through prolonged pressure of the catheter, can be avoided by reserving the urines collected the first few minutes for microscopic examination.

These measures are of extremely practical value and by their application it is, in the greatest majority of instances, possible to determine whether in an existing hematuria blood originates from one or from both ureters simultaneously.

Whether, though, the focus is located in the kidney itself or its pelvis cannot be ascertained either by cystoscopy or ureteral catheterization. Even the microscope will, but rarely, permit of correct differential diagnostic conclusions. In the majority of instances only blood-cells in abundance will be demonstrable. The significance of differently shaped and sized epithelial cells as regards the focal diagnosis, so persistently accentuated by Heitzmann of New York, is overestimated and may lead to erroneous conclusions. The only microscopic evidence of real value is furnished by the appearance of casts, which conclusively point to a pathological process of the kidney proper. More valuable, in this connection, are other methods of examination like radiography and bacteriological investigations (for tubercle-bacilli, b. coli, etc.), which together with the consideration of the whole clinical picture will, in the great majority of cases, enable us to formulate an exact focal diagnosis.

After determining the focus of bleeding, its etiology and underlying pathological process must be the object of our diagnostic investigations.

Bleeding from the anterior urethra is a comparatively rare occurrence. It may be due to a very intense acute gonorrhea, when after repeated erections the spontaneous discharge at the external meatus is tinged with blood. The diagnosis of this condition is easily feasible on the basis of the history, by local inspection, and particularly through microscopic evidence. Equally easy is the recognition of an urethral hemorrhage caused by stricture which occurs, at times, through laceration of a small vessel behind the stricturated area due to the patient's continuous straining in micturating. The introduction of a button-sound suffices to secure the correct diagnosis. Trauma of the urethra connected with hemorrhage may be caused by pressure or blow from the outside, by the introduction of an instrument or by an intraurethral operation. It is important to know that an outward sign of a trauma or a perceptible lesion of the integument of the penis may be entirely missing in the presence of an intraurethral rupture. For diagnostic purposes it suffices to introduce a soft-rubber catheter, which can easily be passed to the bladder in case of a small tear in the urethral wall, while in the presence of a more extensive laceration or complete rupture, the beak of the instrument will become stuck at the point of interruption of continuity.

Terminal hematuria is a frequent and the most important symptom of bleeding from the posterior urethra. Of etiological moment in this connection are a severe posterior gonorrheal urethritis (the so-called cystitis coli), tumors located in the posterior urethra, and a pathological process of the seminal vesicles. The diagnosis of terminal hematura in acute cystitis colli is, obviously, easy; its occurrence is readily explained by the severe tenesmus characteristic of this form of gonorrhea, of which it is a symptom of almost pathognostic value. Terminal hematuria is also a not infrequent occurrence in chronic posterior urethritis where, after the disappearance of all untoward subjective manifestations, it may be the only symptom pointing to a still existing pathological process at or near the bladder entrance.

Affections of the seminal vesicles, with terminal hematuria, are characterized by losses of sanguinolent sperm and a nodular involvement of the vesicles which can be ascertained by palpation from the rectum. Tumors located in the posterior urethra, which almost without exception are papillomas, can at present be easily recognized by irrigation-endoscopy. A papilloma at that location may exist a long time without any untoward subjective or objective symptoms except that of terminal hematuria.

Small concrements of the bladder may occasionally cause terminal hematuria. If a small calculus, at the end of the miction, is pressed against the bladder neck, it may, through traumatism of the internal sphincter, cause the evacuation of a few drops of blood. The same symptom may occur in vesical papilloma located near the sphincter; one or more of the easily bleeding villi of the neoplasm may, at the end of micturition, be caught between the contracting fibers of the sphincter causing, by these means, rupture of a small vessel, resulting in the appearance of a few drops of blood.

Hemorrhage from the prostate occurs quite often in prostatic hypertrophy. The general belief, hematuria in connection with senile enlargement of the gland to be almost always indicative of cancer, is erroneous. Hematuria in a prostatic may occur suddenly and without an apparent cause and may be as abundant as that caused by cancer. For the correct interpretation of such an occurrence cystoscopy is very useful and at times indispensable, provided it is feasible. For in the presence of a voluminous prostate it is often impossible to pass a metal instrument, and inspection of the bladder through a cystoscope in situ cannot be accomplished in many cases on account of severe and continuous bleeding. Of dif-

ferential diagnostic moment between bladder-tumor and affections of the prostate are, besides that, two symptoms: bleeding may occur, as soon as an instrument reaches the prostatic urethra, and an existing hemorrhage may, by this means, be intensified. If, moreover, in irrigating the bladder through the shaft of the cystoscope the last few drams of the otherwise clear fluid repeatedly return bloody, then the prostate can be assumed to be the source of bleeding.

Bleeding from the bladder may be caused by neoplasms, concrements, foreign bodies and inflammatory processes of the vesical mucosa.

The classical and, in many instances, the only reliable method for the establishment of a correct diagnosis is cystoscopy. The evidence is thus procured rapidly and often at one glance without any harm and appreciable discomfort to the patient. Unfortunately, though, cystoscopy is not feasible in every case of bladder-hematuria. Severe bleeding, stricture of the urethra, intense tenesmus, etc., are mentioned as some of the unsurmountable impediments to successful cystoscopy. Therefore a few essential points which are of practical value for the establishment of a probable or non-cystoscopic diagnosis should be borne in mind: Hematuria due to bladder tumor will, as a rule, appear quite suddenly and without an apparent cause, while that due to concrements is in most instances caused or intensified by exercise. Bleeding due to tumor is generally painless and more profuse than that caused by stone; the former rarely yields to treatment, while the latter is connected with pain and, as a rule, will cease at bed-rest of the patient. Characteristic of tumor hematuria is, besides that, that it may, after a shorter or longer duration, stop as suddenly and unaccountably as it started. Bleeding due to cystitis is generally complicated by more or less intense tenesmus and by the microscopic appearance of pus. The most important and most frequently observed type of bleeding connected with an inflammatory process of the bladder may occur in tubercular cystitis, as a sequel to unilateral renal tuberculosis. It is worthy of mention, in this connection, that the slight hematuria or the blood-tinged appearance of urine characteristic of tubercular cystitis is, almost always, due to tubercular ulcerations of the bladder-wall.

Bleeding from the ureter may be due to stone or neoplasm. Tuberculosis of the ureter is justly looked upon as a sequel of nephrophthisis and, therefore, does not need to be considered as an affection per se. The diagnosis of stone of the ureter is made by means of radiography in connection with a shadow-casting catheter and is unimpeachable, if the stone-shadow lies within the course of the ureteral shadow. Tumors of the ureter are, as a rule, observed in connection with neoplasms of the bladder or the renal pelvis, although quite a number of isolated papillomas of the vesical end of the ureter have of late been observed cystoscopically.

The diagnosis of the etiology of bleeding from the kidney and renal pelvis offers many perplexing difficulties.

Nephrolithiasis as a cause of hemorrhage from the kidney or its pelvis presents similar symptoms as vesical lithiasis. The bleeding is scant, it becomes intensified by exercise and, as a rule, ceases at bed-rest. Although radiography is justly considered a very important means for the recognition of nephrolithiasis, it may lead to grave diagnostic errors and should not be overestimated to that extent as to be considered the only clue to a correct diagnosis. Small urates, so often the cause of intense pains are, as a rule, not visible on the plate, while stone-shadows, not rarely, will appear on the plate, which may lead to an erroneous diagnosis at the hands of even experienced observers.

Hemorrhage in connection with renal tuberculosis is one of its characteristic early symptoms, a fact that should be borne in every practitioner's mind. A severe attack of hematuria may occasionally be the first and only symptom of the malady. Later stages are characterized by either insignificant macroscopic or only microscopic hematuria. The diagnosis of renal tuberculosis and particularly that of its incipient stage is almost always feasible on the basis of the bacteriological examination of the urine sediment and especially by means of the guinea-pig test.

Hematuria due to renal neoplasm may appear just as suddenly, be equally profuse and refractory to treatment, and disappear just as unaccountably as that caused by bladder tumor. In the absence of other characteristic symptoms (pain, cachexia, palpable mass) hematuria may be the only symptom pointing to the presence of a grave lesion. The late Nitze, therefore, used to advise early cystoscopic investigation in cases of suspected renal tumor, to be carried out during the course of active hematuria and to be followed by exposure and, if indicated, removal of the bleeding organ. No significant progress as regards a more exact preoperative diagnosis has been made since Nitze's day. The determination of relative renal function, which is of such marked diagnostic value in other renal surgical lesions is, as a rule, of no material aid in these cases of renal malignancy, since appreciable deterioration of function on the affected side would be noticeable only in case of destruction of the largest part of kidney-parenchyma through tumor tissue. In the presence, though, of a malignant neoplasm occupying a smaller part of the kidney and particularly in the most frequently occurring renal neoplasm viz: the hypernephroma, which inclines to early and multiple metastases, the affected kidney is frequently found to be functionally intact. The diagnosis, therefore, in a suspected renal neoplasm marked by hematuria can, in many instances, only be made at the operating-table.

Two other pathological conditions, viz: unilateral nephritis and the so-called essential hematuria from an otherwise healthy kidney, may, like renal neoplasm, cause no other subjective or objective symptom except profuse hematuria. On the basis of prolonged observation and repeated careful urinary examinations a true nephritis will, of course, almost always be recognized through appearance of albumen and casts in the urine;

but while this inflammatory process generally occurs bilaterally, hemorrhage, quite often, may be present on one side only. The correct interpretation of the underlying pathological process of the profuse hemorrhage originating from an otherwise macro- and microscopically healthy kidney is still sub judice. Hematuria may, thus, be the only symptom in common to these three pathological conditions, viz: Renal neoplasm, some types of nephritis with unilateral bleeding, and the so-called unilateral renal hemophilia or, as it is termed by others, renal angioma, and since the existence of malignancy, by means of conservative methods can, as a rule, not be excluded in these lesions, the early exposure of the bleeding focus for diagnostic purposes seems to be indicated.

The knowledge of what can be accomplished by a more exact diagnosis of hematuria is the only key to early and rational treatment. This is a subject of equally wide scope and importance and ought to receive the attention of this Society at a future occasion.

CLINICAL RECORDS.*

By EUGENE S. KILGORE, M. D., San Francisco.

I. OUTLINE OF CASE HISTORIES.

The following outline of history and physical examination with remarks on the same is from the "Ward Reference Book" of the University of California Hospital. It is the prescribed form for use in the medical service of Dr. H. C. Moffitt, and with suitable modifications, it is used by the other services. It is put in the hands of medical students during the course in physical diagnosis and is thereafter followed by them in their case reports. It is not offered as anything original (in particular, we acknowledge indebtedness to Dr. Richard Cabot for suggestions), but merely as an example of a form which has been found satisfactory and useful in teaching and in standardizing the clinical records of the hospital. The adherence by interns to a standard arrangement of histories reduces the number of important facts which fail to get into the records and is an aid to the one who reads the histories in search of particular statements. The exact arrangement of the history form is largely a matter of individual preference, but certain points which merit special consideration are brought out in the "Remarks and Directions to Interns" which follow.

The outline is exemplified by the following case:

Doe, John J.

Aug. 2 1915. PREVIOUS ADMISSION:[1] Jan. 8-30, 1912. DIAG.: APPENDICITIS. After 3 days' illness, op. showed ruptured appendix. Drainage. Uneventful recovery.

O. P. D.† FINDINGS:[2] WASS. neg. (July 20, '15). FECES: Guaiac neg. EWALD MEAL: Free HCl 20, Tot. ac. 30. Bismuth plates taken.

F. H. F, 4 B & S 1 & w.[3] M d aet. 78 of hemiplegia. 1 B d of pulm. tb. 5 yrs. ago **(co-residence during last few months).** Wife & 3 Ch. 1 & w. 1 induced then 2 spontaneous misc. before first Ch.

P. H. RES. & OC.:[4] Stockton, Cal. 0-19 (school) San Fran. 19-22 (clerk, pressman); then visited Panama, Chile, San Diego, Seattle several times 22-24 (steward); San Fran. 24-37 (electrotyper—frequent graphite dust, some acid fumes (SO_2?), much contact with metallic lead, some with copper—no precautions). No occupational strain.

SOCIAL DATA:[5] Steady worker 8 hrs., 6 days, $100 per month. He is the sole support of family of 5 in small 3d floor flat. Felt "tired for years," but could not afford vacation.

HAB.:[6] 1 cof., 1 tea daily. Occasional beer; never drunk. Tob. averages 10 cigarettes daily.

DISEASES:[7] Measles, scarlet f., pertussis in childhood. Rheum. f. aet. 25 (bed 4 wks.—ankles, knees, wrists in succession). Appendicitis aet. 34 (vide supra). Otherwise always strong and well. **No typhoid.** VENEREAL denied.[8]

P. I. COMPLAINT:[9] Abdominal pain.

During[10] the last 8 months, at intervals of 3 to 21 days he has suffered from ½ to 12 hours at a time SEVERE BURNING and at times colicky PAIN IN THE RIGHT HYPOCHONDRIUM, often radiating to the right shoulder, never elsewhere. Attacks have sometimes begun when he was in bed; there is no apparent relation to meals or exercise. The pain is sometimes relieved by pressure or hot applications; it was not affected by 8 gm. of soda. During attacks he has sometimes felt FEVERISH, but there have been no chills and no nausea or vomiting. Following one attack his wife thinks his EYES WERE SLIGHTLY YELLOW TINTED. Dark urine, clay or tarry feces never observed. No changes in vision, urination, or sexual power; no night ataxia or other sensory or motor symptoms.

Appetite and general strength have remained fair, although the ATTACKS ARE BECOMING MORE FREQUENT AND MORE SEVERE and often interrupt his otherwise sound sleep. Constipated for years. Wt. 70 kilo. 1 yr. ago, 65 now. (No diet restriction.)

P. E. Av. d. & n., lying comfortably in bed, not sick looking. SKIN, sclerae, muc. memb. sl. palc. **No jaundice.** PUPILS eq., circular, react to l. & d. EYE muscles, EARS, NOSE neg. TEETH good. GUMS, TONGUE, THROAT neg. **No lead line.** THYROID, SUPERF. LYMPH NODES neg. **No supraclavicular l. n.**

CHEST: moderate funnel shape.

LUNGS:[11] Rt. apex in front above second rib sl. dull with incr. voice and whisper, no rales (probably physiological). Otherwise neg.

HEART:[12] Apex impulse not seen but felt in 5th space 10.5 cm. from midline (1 cm. inside nipple line). Dullness from

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* In this and following articles is described a system of clinical records which has been developed in the last three years in the University of California Hospital. It is intended for use in a teaching hospital adequately manned by interns, residents, visiting staff and filing clerks. An article by the writer, entitled "Clinical Records in Relation to Teaching and Research: a Plan to Promote Conservation and Utilization of Material," is appearing together with an article on "Diagnosis Nomenclature," by Dr. James L. Whitney, in a current number of the Boston Medical and Surgical Journal. Reprints of the series when complete, together with sample record forms and diagnosis nomenclature, will be sent on request.

† A list of abbreviations is to follow. For convenience the following are given here: O. P. D.—Out-patient department. F. H.—Family history. P. H.—Past history. P. I.—Present illness. P. E.—Physical examination. F. 4 B & S 1 & w—Father and four brothers and sisters living and well. M d aet. 78—Mother died at the age of 78. Res. & Oc.—Residence and occupation. Av. d. & n.—Average development and nourishment.

midline; 11 cm. to left in 5th sp., 3 cm. to rt. in 4th sp., 2nd rib above. Sounds reg., good quality. $A_2 > P_2$, neither abnormal. A soft blowing systolic murmur over the lower precordia and axilla, is loudest at the apex.

PULSE:[13] rate 70. Radials eq. reg., normal vol. and compressibility. Artery walls neg.

ABDOMEN: Level, symmetrical, soft, tympanitic throughout. No hernia. LIVER dullness 5th rib to costal margin in nip. line. Edge not felt. SPLEEN and KIDNEYS not felt. Moderate tenderness on deep palpation in right hypochondrium, increased by inspiration. **No mass felt. Peristalsis not observed.**

PENIS and TESTES neg.

BACK: Sl. dorsal scoliosis. Otherwise neg.

EXTREMITIES: neg. **No paralyses.**

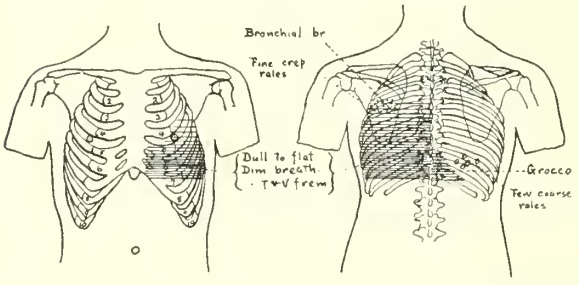
REFLEXES:[14] patellar, Achilles, plantar, abdominal, cremasteric normal.

RECTAL EXAM. neg. **No masses felt.**

REMARKS AND DIRECTIONS TO INTERNS.

This example of history and physical examination is given to illustrate the form and approximately the minimal amount to be included in the medical records of the University Hospital. The capitalized words are those which would be underlined in writing. The statements in heavy type, it will be noted, pertain to this particular case and are not to be included in the "minimal amount." They are examples of a class of statements which is to be used "p. r. n." Thus, every case will present one or more possible diagnoses, and in writing the record the aim should be to give all the evidence for or against each possibility. (See paragraph below on "following clues.")

Negative statements other than those used in



this record should be added wherever they will satisfy a reasonable curiosity on the part of the reader, but not otherwise. Make the record complete but to the point. For example, the statement "No rose spots" under the heading of skin, if true, would be very desirable in the description of a case of fever of unknown cause; but it would be out of place if the case were one of chronic nerve disorder. (The routine recording of a number of negative facts in Family History and Past History is provided for on the "clinical index cards" described elsewhere.)

The numbers of the following paragraphs refer to the numbers on the history above.

(1) When a patient re-enters the hospital his old record should be read and abstracted *very briefly*. (2) If he has attended the out-patient clinics, the *important* findings from the out-patient record should also be set down *very briefly* as here illustrated. In many cases also time can be saved and important matter added to the records by communicating at once with physicians other than those in the out-patient department, who refer cases to the hospital. So far as possible, such data should be placed at the beginning of the record rather than later on.

(3) The permissible abbreviations are mostly obvious in meaning. A list of those to be allowed in the records is to be given later.

Record the health condition or fate of parents, brothers and sisters; also husband or wife, if married, and children. If there have been miscarriages, give particulars as here illustrated; if not, write "no misc."

After eliciting a negative family history, ask about tuberculosis in any member of the family or other exposure to tuberculosis. Also, if the case suggests as a possible diagnosis apoplexy, epilepsy, insanity, neurosis, hemophilia, diabetes, congenital syphilis, or other possibly inheritable disease, let the record show that you have carefully looked for evidence of inheritance farther than the immediate family. In a suspected contagious case opportunities for exposure may be placed here.

(4) Note that in this paragraph on Residence and Occupation a considerable amount of detail is recorded with very little writing. The first line, for example, takes the place of: "He was born in Stockton, Calif., and lived there until he was 19; occupation, attending school."

Be particularly specific in regard to occupation, indicating so far as possible (a) what part of the work the patient does; (b) what materials he handles or what his exposure to dust, heat, moisture, etc., or (c) to what postural, muscular, or nervous strain he is subjected. It would be quite inadequate, for example, to put this man down simply as "printer." A standard text-book on occupational diseases is to be kept in the ward, and should be referred to constantly *during the history taking.*

(5) Social data should be obtained with tact, of course, but also with faithfulness. These facts may have great diagnostic and therapeutic importance. (As soon as the hospital organization will permit, it is desirable to have this data gathered systematically by a social service worker.)

(6) Habits are to be mentioned in a fourth paragraph under the past history. Make positive or negative statements in regard to tea, coffee, tobacco, and alcohol, also other drugs if you suspect them. Avoid the use of indefinite terms such as "moderate"; state the average number of cups or glasses daily and the average daily consumption of cigarettes, pipes or cigars. Do *not* describe appetite, sleep, bowels, etc., here. These statements often come naturally in the description of the present illness, as here illustrated; and when they do not, they should be summarized in a final paragraph of the present illness.

(7) As nearly as possible give diseases in chronological order. In cases where there may be doubt of the diagnosis, e. g., after a history of "rheumatism" or "malaria," record if possible enough par-

ticulars to show the nature of the disease. Ask about all the common diseases; but do not write down the diseases the patient has *not* had unless there are special reasons for so doing. E. g., if the case is one of suspected endocarditis, it is well to write: "No rheum., chorea, or tonsillitis," if gall or kidney stones, "No typhoid," or if nephritis, "No scarlet f."

At the end of this paragraph, after the word "Venereal" in the case of every male patient, write either "denied" or a statement in regard to venereal disease. Be conservative in the use of the terms "chancre" and "chancroid." Usually it is better to say, "genital sore," and to follow this statement with a parenthesis containing all the available evidence as to which it was; e. g., the incubation period, presence or absence of buboes, secondary rash, sore throat, falling hair, etc.

Be careful not to offend women by asking questions about venereal disease. When they have it they are very likely to be unconscious of it; and as a rule most of the evidence which their history affords is indirect, e. g., miscarriages, skin, throat or pelvic symptoms, etc.

(8) In histories of women a fifth paragraph under the Past History reads something like the following:

"CTA. began aet. 13; always reg., painful before the flow, normal in amount"—or whatever the story is.

(9) The "Complaint" is to emphasize what brings the patient to seek medical advice. Sometimes this is best expressed in the patient's own words, e. g., "Bursting feeling in abdomen"; but more often the patient's statements are round about and strongly tinctured with ideas of his own or other peoples' about the pathology and diagnosis of his condition. It is senseless to record: "liver trouble" or "weak kidneys," when the patient's trouble is really constipation or pain in the back; and it is of no advantage here to quote his own words about sitting in a chair all night when "orthopnea" will express perfectly his complaint. Do not write two accounts of the Present Illness. The "Complaint" should seldom occupy more than one line.

(10) Up to this point most histories can be written at once in permanent form, but a good description of the present illness cannot often be made without taking preliminary notes and carefully planning the arrangement of the facts. Toward the end of the questioning an excellent plan is to run over mentally the different "systems," e. g., nervous, digestive, circulatory, respiratory, cutaneous, genito-urinary, and to ask particularly for symptoms connected with each of them. But in writing out the history it is not desirable to make subdivisions according to anatomical systems, as this almost invariably leads to needless use of space and destroys the directness which is so desirable. Those whose history-recording machinery is too elaborate are the ones who miss the essentials when they lie a little off the regular track.

Few general rules for the arrangement of the "Present Illness" can be given. The aim should be to express in the fewest words a complete and connected account of all the important symptoms. Often the first sentence can give the time of onset of the main symptom; whether it has been continuous or intermittent, and if intermittent, the duration of attacks and of intermissions; then a typical attack may be described in detail. As a rule the chronological order is the best for describing the events of an illness; at other times it is better to follow through individual symptoms. But whatever the order adopted, *finish one description before passing to another.* This not only helps the writer of the history to get all the facts, but it is of great assistance to the one who tries to interpret them. It also makes the record less bulky. For example:

"Three weeks ago the patient began to be troubled with a pain in the abdomen. It is sharply localized in the right hypochondrium. No history of trauma obtained. Remembers no indiscretions of diet. The patient says he is now getting worse. The patient has had the pain continuously from the onset. The pain is described as of a dull, aching character. Sometimes he has complained of colic. Has not been able to sleep for the past few nights. The pain has never radiated. He has also been tender to touch over the right hypochondrium. The present attack came on gradually."

Compare this with the following:

"Three weeks ago, without trauma or other known cause, the patient began gradually to suffer a dull, aching, sometimes colicky pain, not radiating, and associated with tenderness in the right hypochondrium; it has continued to the present without intermission and with increasing severity, preventing all sleep in the last few nights."

Following clues. Whenever a possible diagnosis is suggested by any point in the history (or the examination), group all the evidence on this point, either for or against, which can be elicited from the patient. For example: If you have recorded that there has been swelling of the ankles, do not leave this point without either describing other symptoms which may be referable to heart or kidneys, or writing "no dyspnea, cough, palpitation, nocturia, oliguria, headache, visual or digestive disturbances." As a rule, negative statements should not be made except in such cases as this where they anticipate the natural curiosity of the reader.

Irrelevant matter. While endeavoring to record all the facts that may have a bearing on the case, do not be influenced by the patient to write down irrelevant matter. What is wanted is an accurate account of *observations* made by him or his friends, divested of the *inferences* which are so often associated. If the patient can repeat the opinion of a competent physician, or can state the amount of quinine, mercury, arsenic, digitalis, or biologic treatment he has taken, these facts and a few others should of course be set down in detail; but most of the stories about doctors and medicines should be omitted.

For the sake of brevity, incomplete sentences like the ones used in the example above may be employed at times, but the main part of the description of symptoms should be in good grammatical exposition, smooth, clear, and concise.

The *main* symptoms as they appear in the history

and the abnormal physical findings should be underlined. (For printing it has been necessary here to capitalize these statements.) This will permit an instantaneous visual summary quite as well as an elaborate system of marginal headings. *Do not sacrifice effectiveness by underlining too much.*

(11) The examination of the lungs may well be divided into the separate processes of inspection, palpation, percussion and auscultation, but it is not well to record results in this order. If, for example, abnormal signs were discovered at the right apex and the left base, each situation should be described separately.

Unless the lung findings can be clearly expressed in a few words, they should be supplemented by diagrams stamped on the history sheet. If the entire length of the diagram of the rubber stamp is not needed, the superfluous parts may be eliminated by laying down pieces of paper over the record before applying the rubber stamp.

The use of signs to indicate pathological conditions in the lung had better be limited to those shown in the accompanying diagram (Fig. 1), and in every case they should be unmistakably labeled in writing.

(12) By "apex impulse" is meant the lowest and outermost point at which the cardiac impulse can be distinctly perceived, not necessarily the point of maximum intensity. It should be localized by giving the interspace, the distance from the midline, and the distance inside or outside the nipple line; or, if the nipple is not a fixed point, the midclavicular line. Use the form of sentence indicated for giving the outlines of dulness. Unless otherwise specified it is understood that the right and left borders were measured from the lowest levels at which these borders could be percussed, i. e., just above the liver dulness on the right and in the apical region on the left.

"$A_2 > P_2$" means that the second heart sound heard in the second right interspace just beside the sternum is louder than the second sound heard in a corresponding area on the left. The examiner should then state whether or not he considers either of the sounds to be pathological, i. e., abnormally accentuated or diminished.

Rather than state that a murmur at such a place is "transmitted" to such another, it is better ordinarily to give the total area over which it can be heard and the surface point where it is loudest. In this way one can give all the facts at his disposal without asserting something which he really does not know but only surmises, namely, the point of origin of a sound and the direction in which it is carried.

(13) Under the heading "Pulse" should be mentioned the rate rhythm, volume and compressibility (systolic pressure), also the condition of the artery walls in the radials or elsewhere. In special cases it will also be desirable to state whether or not the radial, carotid or other pulses are equal and synchronous.

(12) While in general it is desirable in writing the physical examination to be purely objective and to avoid stating the examiner's personal ideas as to the meaning of things, in the case of reflexes, the term "normal" is convenient, and should be within the examiner's power to use truthfully.

The term "negative" or "not remarkable" is ordinarily used instead of "normal" because it is more conservative; "negative" simply means that the examiner did not find any abnormality worth noting. "Normal" in most cases implies a degree of knowledge greater than can be obtained with certainty from the examination.

CONDITIONS IN THE LOWER BACK INVOLVING THE SACRO-LUMBAR AND SACRO-ILIAC ARTICULATIONS.*

By C. L. LOWMAN, M. D., Los Angeles.

The careful consideration of symptoms and findings in cases in which the lower back is involved has, during the past few years, opened up the way to fruitful results, clearing the way for the relief of a large class of cases, such as the so-called "sciatica," "sciatic rheumatism," "lumbago," "neuritis," etc., which have gone the rounds, getting varying degrees of help, or none at all.

We were formerly erroneously taught that the sacro-iliac joint was not a true joint, and that in the adult the sacrum fused with the iliac bones. Later, from observations in obstetric practice, in injury cases and in cases of pathologic lesions in this locality, various men were moved to closer study of the anatomy of this region. Goldthwait, especially, was one of the earliest to bring this to the attention of the profession. Albee, in dissections on forty or more cadavers, found true joint structures, synovia, cartilage, etc., and decided the sacro-iliac joints were true joints.

The increasing attention given to postural needs, studies in relation to clothing, etc., also emphasized the importance of this connecting link, anatomically, between the trunk and the lower extremities, and the application of this knowledge brought results. Consequently, diagnoses of sacro-iliac strain, sprain, dislocation, subluxation, chronic slipping of the sacro-iliac, etc., became common in our orthopedic practice.

It was found, however, that certain of the cases did not respond as readily as others, and measures recommended by Goldthwait and others didn't seem to help. These problems are being worked out, showing that, although many symptoms are alike in these cases, upon finer and more careful diagnosis and clinical observations, they belong in the group involving the sacro-lumbar articulations.

To refresh our minds a little let us glance at the principal anatomic features in the region under consideration. The spinal column, a flexible, movable shaft, rests upon the body of the first sacral, on an area which is, roughly speaking, one and one-half to two inches in diameter; it is held in position by ligaments and prevented from sliding forward normally by the articular processes. The lateral mass, or wings of the sacrum, appear on either side, bearing a prominence, or tubercle, on their upper border and extending outward to meet the ilia about on a level, or a little lower than the

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level, of the vertebral articulation, flaring up somewhat at the outer, upper angle above the sacro-iliac joints. The articular processes usually extend upward and downward, vertically. The last lumbar vertebra varies considerably, but usually its lateral processes pass above the lateral mass of the sacrum, clearing it from one-fourth to one-half inch, and should lie anterior to the posterior portion of the crest of the ilium, as it curves downward and backward.

So much for the normal anatomy, or rather what was taught to us as normal, which is of little use to us in handling or considering affections in this region, for the reason that most of the cases that come to the doctor are not true to the ideal anatomic type as taught us in our texts. It is rather the variations from type, or really, an entirely different type, in whom we find changes, not only in this region but in others as well. Goldthwait claims that about one person in five has congenital peculiarities of anatomy, and consequently of posture. As, for instance, visceroptosis because of a very long mesenteric attachment of the transverse colon, or mesenteries, on the ascending and descending colon, where usually there are none. It is interesting to note that it is largely in this type that we find so many of these postural defects, and also that they constitute a very large proportion of our functionally weak and partially invalided class of chronics, or those who correspond in Treves's classification to the carniverous type, Bean's hyper-onto-morph, and the "congenital visceroptotic" of Goldthwait. In the vertebral column in this class of individuals we may look for peculiarities at the points where the vertebrae change type, i. e., cervico-dorsal, dorso-lumbar and lumbo-sacral junctions.

The last lumbar frequently takes on partly, or wholly, characteristics of the first sacral, having abnormally wide or flaring wing-like lateral processes, sometimes bifurcated, more often simply widened, and frequently impinging on the tubercle of the sacrum, either because of this abnormal size, or on account of the shape of the sacrum or position of the ilia.

In those who have a deep-set sacrum, or a narrow space between the posterior spines, this is more especially seen. Dwight noted that an articulation often occurred here and named it the sacro-transversalis. We sometimes find an absolute ankylosis; in others we note in the X-ray a gray cloudiness, at others we note in the X-ray a gray cloudiness, partly or wholly obliterating the usual clear triangular space, between the lateral process of the vertebra and the upper border of the sacrum. This occurs in bursitis of this area and also where arthritic changes are taking place. Occasionally one sees abnormally long lateral processes, which are hung up on one or both sides on the ilium. Normally they would appear to overlap or telescope the crest, lying one-half inch or so in front, but in case the lumbar lordosis was absent and the back flat, which would rotate the sacrum and lower lumbar backward, they would be brought together with resulting friction, bursal formation, callus or ankylosis.

One of the X-rays which I am presenting shows an upward tilt to one of the processes, because of bearing against the ilium. In this same connection Goldthwait has pointed out that one of the most important variations is the flattening of the articulation, where the articular processes ordinarily would interlock. In place of being vertical, the joint may be crescentic or low and flat. The importance of this is that it allows forward and backward motion, or a sort of rotation around a vertical axis, and this would bring the lateral process too far back, and continued motion or injury, develops a bursitis, the swelling of which often binding or pressing on the adjacent nerve root with resulting sciatic symptoms or pain radiated through to the abdomen or anterior region of the thigh; or, osteoarthritic changes coming on, might be the first thing occurring to call attention to this locality.

Of course one may see these variations frequently, when there are no symptoms complained of, but their occurrence is usually noted in those who are more or less mechanically weak. When strain from occupation or sudden strain from injury occurs, they are more prone to be affected. The friction allowed by abnormal looseness or play in the sacro-iliac, or between these sacro-lumbar points of impingement, occurring daily or intermittently, especially in the presence of arthritic tendencies, may produce the above-mentioned formations, spurs, ridges or ankylosis, or undue pressure on some portion of the sacro-lumbar plexus with resulting neuritic symptoms.

An important point, which should not be overlooked in any case with sciatic or back symptoms, is the general posture of the whole body in both planes; for, many times, the local findings, both clinical and X-ray, will not give sufficient light to explain the condition. The general malalignment due to round shoulders or round back, increased or decreased lordosis, short leg, inward rotation of legs and knees, pronated and flat feet, must be ascertained if the best results in treatment are to be obtained and remain permanent.

As I have mentioned posture, probably this would be a good point to note how to align a patient in examination. In the lateral plane, simply by hanging a plumb line, from the seventh cervical and noting whether it passes to right or left of the nates. For the antero-posterior, the line should fall from the tip of the mastoid, through the front of shoulder, great trochanter, just back of patella, and into the foot about one inch in front of the external malleolus. The gravity line of the leg in the lateral plane should fall from the anterior superior spine, through the patella, middle of ankle joint and to the outer side of the head of first metatarsal. The leg length should be measured lying, from anterior superior spine to inner malleolus, and also in the standing position from anterior superior spine to ground, in order to estimate whether a unilateral flat foot or more lowering of the arch on one side than the other is responsible for letting the pelvis down on that side.

The history in these cases is usually typical. Symptoms coming on after a mild injury, such as a

twist or a turn, cranking an auto, stooping over to pick up something, either heavy or light, or occupational strain due to one-sided position. More direct and severe injuries, such as falling on the feet, knees, or buttock, are more apt to produce luxation of the sacro-iliac. Cases of more gradual onset, without much reference to a specific strain or injury, are more than likely due to, or accompanied by, arthritic changes, plus some faulty postural condition. We must, of course, remember malignant diseases, tuberculosis and luetic conditions, all of which may affect this region, but the loss of weight, temperature, cachexia, swelling, and X-ray findings will decide them. Acute infectious arthritis, from Neisserian infections, typhoid, etc., frequently attack this area, but the history, severity of temperature, etc., usually clear the diagnosis.

Certain clinical tests are of value when considered with other findings. Straight leg raising—patient supine—flex thigh to right angle and extend at knee. This tightens the hamstrings and pulls on the ilium of that side. If the sacro-iliac joint on that side is affected the spasm elicited prevents further straightening and the test is said to be positive. In sacro-lumbar cases this sign may or may not be present, but is not so marked unless both regions are involved.

A new test for sacro-lumbar conditions has recently been suggested by Ely of San Francisco. Patient lies prone—an attempt to hyper-flex the knee elicits spasm of the psoas and the buttocks are immediately raised, flexing the thighs. This test is usually negative when sacro-iliacs only are involved.

The bending tests—forward, backward and sideways—are suggestive but may be more or less alike in either case. In sacro-iliac cases only, bending is freer toward the affected side. Forward bending will be limited in either case. If there is lumbar stiffening from arthritic changes the whole area will remain stationary, and move as one piece.

I am working on a test which, I think, may help in differentiating between sacro-iliac and sacro-lumbar cases, but I cannot say yet whether it will work out to be of any value. It is this: with the patient supine—legs extended—forcible attempts to rotate leg inward elicit pain by tension on the pyriformis muscle, which I think will not usually occur in sacro-iliac cases. This might be modified by the amount of sciatic pain, because of the close proximity of the muscle to the nerve. It is an interesting fact that the radiated pain in sacro-lumbar cases is anterior to abdomen, groin and front of thigh, whereas, in sacro-iliac cases it is more apt to go down the main sciatic, back of leg.

Citing some cases will convey, as clearly as any other way, points and symptoms to be considered in making the diagnosis and outlining the treatment.

Case I.—This case represents a sacro-lumbar bursitis entirely relieved and controlled by foot and leg correction, followed, after a period of rest, by corrective exercises. No return of symptoms a year after treatment.

History.—Dr. A., March 9, 1914. Formerly dentist. Referred by his doctor for pain and ache in the lower back. Aged 52, weight 158.

Family History. Negative.

Past History. Typhoid about thirty-six years ago. "Sciatica" for past three or four years, "pain back of the hip and running down the leg" (patient pointed to the sacro-iliac area). Has always called it rheumatism. Has been to Arrowhead Hot Springs for a month or two at a time. Some relief but not permanent. Has been very nervous for the past two or three years. Has had several osteopathic treatments without results. Has to favor himself some in moving, especially in bending and twisting. Tires easily on standing. Says it seems good to have the back held up. Movement aggravates and rest improves the condition.

Examination. Posture relaxed. Plumb line falls to the left of the nates one inch. Pelvis tilted to the left. Measurements: Anterior spine to the malleolus, right, 33.5, left, 33.25. Anterior spine to the ground, right, 36.3, left, 35.6. Umbilicus to the anterior superior spine, right, 6.5, left, 6. Episternal to the anterior spine, right, 21, left 21.5. Straight leg tests, right leg rigid, left less so, elicits no pain. Prone lying, right posterior spine lower than the left. Forward bending free. Left bending fair. Right bending freer. No pain elicited and no spasm. Marked inward rotation of the thighs. Marked pronation of the ankles. Moderate depression of both arches. Very slight swelling and congestion. Both feet flexible but not painful. X-ray shows short, wide lateral processes of fifth lumbar. The right one close enough to the tubercle of the first sacral to impinge on movement, and in standing with pelvis tilted to left it probably does. Note gray mass in the interspace, where it should be clear. The left process is bifurcated.

Treatment. Active treatment from April 9th to May 25th, 1914. Orthopedic shoes, with the valgus wedge in the inner border of the heel; one-fourth inch raise. One-half inch pad in the right shoe to change the body poise. Feet strapped and padded with felt and adhesive for a few weeks, followed by arch plates.

Result of treatment. Within three or four weeks patient received relief from the symptoms. Has reported several times since for plate adjustments and shoe corrections and reports that he is still free from all symptoms and that nervousness has all gone.

Comment. You will note that there has been no treatment for the back, with the possible exception of general gymnastics.

Case II. This case represents the dislocation of the sacro-iliac from injury. X-ray presented.

History. Mr. McC., age 27. Strong, powerful man, six feet one or two, weight 205. Presented himself November, 1913, with a history of injury six months previous. Sitting on a box in a freight car while the switch engine was moving the car. Car thrown against bumper and he was thrown off, alighting on the buttock. Treated in the railway hospital, no relief. Told there was nothing the matter. Was given high frequency and massage. Three weeks at the hot springs, no relief. Uses crutches in walking. All body movements guarded. Has extreme list to one side with secondary scoliosis. Straight leg test positive, eliciting great pain. X-ray showed the left iliac crest nearly one inch higher than the right. The sacrum rotated similarly, rising high enough on the left so that the lateral mass on the sacrum nearly impinges against the lateral process of the fifth lumbar. Probably at the time of the accident it did impinge and may have been a factor in increasing the sacro-iliac condition. Measurements: Leg lengths, equal. Umbilicus to anterior spine, right, 8, left, 6½. Episternal to anterior spine, right, 24, left, 22½.

Comment. The deviation is far greater than one would have in an ordinary posture case, but might otherwise occur in a long standing case of scoliosis, or tilted pelvis, such as follows infantile paralysis or T. B. hip, etc.

Treatment. Manipulation under anesthetic, fol-

lowed by plaster casts, spine brace to be worn for at least a year.

Result of Treatment. Case checked up nearly a year later and back measurements found symmetrical. No recurrence of symptoms. Has made no effort, however, to do any heavy lifting.

Case III. This case illustrates severe sacro-iliac relaxation with sacro-lumbar involvement.

Mrs. V. D. Presented herself for treatment November, 1911.

Family History. Negative.

Past History. Had seven children close together. No severe labor, lacerations, or severe pelvic symptoms, except during the last two pregnancies, when she had to be assisted in moving around because of weak feeling and disability in the back.

Present condition dates back to these pregnancies. Her first symptoms being weakness and backache. Her family doctor had advised operation several times, which she refused to have. She was finally referred to me by another practitioner, who diagnosed the condition, as far as saying he felt her sacro-iliac joints must be affected.

Examination showed a typically relaxed and dislocated sacro-iliac joint, so loose that the heavy, crunching crepitation felt posterior to the joint line in the straight leg raising test felt as though one were crushing a handful of gravel in the hand. All movements guarded. All bending tests and leg tests elicit pain. Leg measurements, left leg one-fourth inch shorter than the right. Episternal to the malleolus measurement three-fourths of an inch shorter on the left, giving her an uncompensated list to the left. X-ray showed more or less arthritic appearance between the fifth lumbar and the sacrum, with impingement between the lateral processes of the fifth lumbar and the sacrum. These processes were abnormally wide and long and showing an attempt to sacrolize, imitating the characteristics of the first sacral.

Treatment. Put in plaster girdle in the suspended position with the body sagged forward into hyper-extension. Relief was great enough from this cast so that she gained twelve pounds in the first month, then she tripped on a rug and dislocated the joint under the cast. Came to the city the same night and had another cast put on the next morning. Correction of her general statics was also seen to, and the sole of her left shoe was raised in order to level the pelvis. She returned to her home on the desert. Cast felt much better than previous one.

Comment. This patient was told that she probably would have to be operated on, or at least manipulated, but under the circumstances it was impossible for her to have this done, so the casts were followed by corrective corsets and her body balance was adjusted. Examination made in February, 1915, showed that she was practically relieved from all sacro-iliac symptoms. Straight leg test negative. No crepitation of the joints. No pain on manipulation, but quite sensitive to pressure over the lower lumbar vertebra and over the right sciatic notch. Also sensitive over the right scapula.

This case illustrates very well what long-continued, conservative, supervised treatment will accomplish. This case was one of the most severe of its kind that I have ever seen.

Case IV. This is a case of sacro-lumbar bursitis and malposture.

Dr. L., age 54, weight 148. Presented for treatment March 10, 1915.

Past History. Typhoid at seventeen years, long convalescence. Always under normal. Anemic. Nervous break down last three years from overwork.

Present condition dates back a year. Formerly "never knew he had a back." Condition started up with shooting pains down the leg. Stayed in bed a month. Used to prop himself up to read (which he still does). Rested two months longer. Noticed sore spot over sacro-iliac area on both sides, but in fairly good health until a month ago, when he noticed that if he sneezed he would get a pain down the leg. At present he says it hurts to twist or turn and especially to bend forward. He avoids all jars. Practically all motions guarded. Hyper-extension relieves. Feet and legs tire easily. Wearing a shoe-store plate. Pain radiates forward along the inside of the thigh and nearly down to the ankle.

Examination. One mid-dorsal vertebra and the last lumbar very sensitive to pressure. General posture relaxed. Plumb line falls to the left one inch from the nates. Pelvis tilted to the left. The trunk and leg one-fourth inch shorter on the left side. Straight leg test slightly rigid, but no pain. Ely's test (hyper-flexion of the knee in the supine position) very positive, making him flinch. The pelvis sensitive to pressure over the right lateral process of the last lumbar and over the sciatic notch. Left posterior superior spine a little more prominent than the right. Spasm of the lumbar muscles considerably more on the right. X-ray shows impingement of the lateral process of the fifth lumbar with tilting of the sacrum and compensatory scoliosis. The right lateral process wide and stubby, the left much wider and bifurcated. The fact that the fifth lumbar aligns with the sacrum shows that in lateral bending it acts with it, consequently, it must lever down in lateral movements with a tendency to strain the sacro-iliac joints.

Treatment. Reposturing. Spinal brace with pelvic girdle. Arch plates and corrected shoes.

Result of treatment. April 20, 1915. Reported for arch plate adjustment, saying that he only wore the spine brace occasionally, and the arch plates were so comfortable he presumed I would want to change them. Stated that he was free from all symptoms and could stoop over and pick up a pin from the floor with ease. He couldn't say whether the plates or the spine brace were responsible, but I think each did its share. He can now sneeze or cough with comfort and doesn't have to guard all movements as he did before.

Case V. Miss U. Complaint, backache and sciatica—had a fall from a wagon, striking right side of hip and pelvis. Note some asymmetry in the two sides of the sacro-iliac joints, also the spurs on the crests of the ilia and beginning calcification of the ilio-lumbar ligaments.

Treatment. Reposturing feet, legs and back. Arch plates and corrective corsets, followed by gymnastics. Two years have elapsed and she keeps in good shape as long as she wears the right corsets and shoes.

Case VI. Mrs. J. W. A. Classical case of visceroptotic type. Generally relaxed, with painful spots over whole back, especially right shoulder, from sub-scapular bursitis, and right sacro-lumbar area. Neuritic symptoms in feet and legs. Marked pronation and flattening of arches. X-ray shows sacrum out of line with vertebra. Lateral process close to posterior margin of ilium and shaped as though it had pressed against it, also close to upper border of sacrum. Notice difference in shape of the interspaces on the two sides.

Treatment in this case very slow because of weakness and extreme nervous exhaustion. Kept in a bed stiffened by having boards between springs and mattress. In a darkened room at the hospital for forty-five days before she was strong enough to go to hydrotherapy department. Deep spinal massage and manipulation. Gradually gotten up in a corrective corset having pelvic accessory band, spinal steels and shoulder straps. Corrective shoes; heel of short leg raised and arch supports. Gradually changed from passive to active exercises, at first assisted by nurse. Within a year did a fair amount of housework and looked after two small children. Last report she was still feeling well and doing certain work with care, trying not

to tax her strength. Practically all original symptoms cleared up or controlled.

Case VII. Mrs. I. B., adult. Backache, due to muscle and ligament strain from loosened sacro-iliac and distorted pelvis from fault in development following old hip disease in childhood. Woman otherwise well and strong. Note in X-ray the very different type of fifth lumbar from the above-mentioned ones, ample clearance for the processes, even with the marked pelvic tilt and lordosis and four-inch shortening of one leg.

Case VIII. Mrs. A. L. H. Complaint, backache and sciatic symptoms. Generally relaxed posture, with ptosis, round shoulders, pronated legs and feet, depressed arches. An interesting point in her history is that she was put on a horse at the age of three and rode side saddle during all her growing years. Examination showed scoliosis and pelvic tilt. X-ray aside from confirming this shows left lateral process of fifth lumbar, bearing against the upper outer angle of the sacral wing and the ilium, being bent upward during its development. This case I mentioned in a preceding paragraph.

Case IX. Dr. W. Suffered for years with backache, low down, and severe sciatic symptoms; seen by many men and given many diagnoses. X-ray shows ankylosis at the point of impingement of the right lateral process and the sacrum. The left one being so close that it probably will ankylose. Radiographs were taken in side bending, both ways, and neither side showed any difference of position. Note also the spur on the right side, where the ilio-lumbar ligament attaches. Some fuzziness suggests arthritic changes. In all movements this ankylosis makes the last vertebra act as a portion of the sacrum resulting in mechanical strain. Notice also the small interspaces. It is highly probable that pressure is made on the branch of the sciatic plexus that passes out here.

Treatment. Partial immobilization with spine brace. Baking, deep manipulation and massage. Diagnosis in this case confirmed by Goldthwait.

Case X. Mrs. S. Case of coccydynia and rectal ulcerations with scar tissue. From continued sitting on one side had symptoms of back strain in sacro-iliac area. The X-ray shows clear and shows the vertical articular processes about in their normal positions, and also the more normal type of fifth lumbar vertebra as we ordinarily know it.

Case XI. Dr. A. History dating back several years. Marked limp at present. List to one side. Sciatic pain. Left leg shows atrophy of one inch in thigh and three-fourths of an inch in the calf. Tends to drag leg more when tired. X-ray shows both lateral processes hung up on ilium, and as every other possibility has been eliminated it seems probable that he has a beginning monoplegia, due to pressure on roots in the sciatic plexus.

Treatment. He was manipulated under ether with hopes of removing pressure from present location. Went to Africa as a missionary two weeks later, wearing a spine brace to support pelvis. No report since.

A word about treatment: This has already been referred to in speaking of individual cases. In regard to manipulating under anesthetic. It has been my experience that practically all the cases have benefited by it, even though I have not always had X-ray findings that could demonstrate the probable trouble. I have considered the clinical findings in general and manipulated on the same basis upon which we do a rigid, painful, flat foot. Following this with a plaster spica (the leg portion being on the painful side), from two to eight weeks, and then a spinal and pelvic support, general correction of other postural faults, as flat feet and short legs. Later corrective gymnastics to offset the vicious effect of corsets and braces. These exercises are begun at points farthest away from affected area and gradually approach it. Limitation of activities that would be liable to cause recurrence of symptoms, such as stair climbing, running a sewing machine, auto riding, lifting in bent positions, rocking in a rocking chair, etc. These cases are usually chronic, taking a long time to get permanent relief, although temporary relief is often magically attained by correct procedure. Operative technic will undoubtedly be developed so that relief will be given to the more severe and persistent cases, especially certain monoplegias and cases with atrophy and lameness. Goldthwait is strongly of the opinion that cases of lateral sclerosis are due to pressure on the posterior roots and the degeneration travels up to the cord instead of down.

He is not encouraged by his two operated cases, where the tip of the lateral process was removed. However, Drs. Blanchard and Parker are just reporting a case in which resection for the relief of pain, numbness and paralysis, was entirely successful and the X-ray showed the impingement of the lateral process of the fifth lumbar on the posterior wing of the ilium—subsequent X-ray showing only the stump.

In concluding let me briefly summarize: It is essential to make careful, all-over examinations in cases involving the back.

Associated with back conditions we find in a great percentage of the cases other postural faults.

Careful study of cases in which there are local symptoms in the lower back and legs will lead us to make more accurate diagnoses and not be satisfied with vague terms, such as "rheumatism," "sciatic rheumatism" or "sciatica."

Anatomical faults in the sacro-lumbar region do exist, and frequently give rise to symptoms varying all the way from simple muscular and ligamentous strain to paralysis from pressure.

As our knowledge increases we shall gradually learn to differentiate between the various conditions affecting the sacro-lumbar junctions and those involving the sacro-iliac synchondrosis.

THE DIAGNOSIS OF URETERAL CALCULI, AND A DESCRIPTION OF A TECHNIC FOR USE OF THE WAX-TIPPED CATHETER IN THE MALE.*

By FRANK HINMAN, M. D., San Francisco.

The symptoms of urinary stone are in no way diagnostic. The colic due to stone differs in no way from that due to blood clots, to kinks in the ureter, to adhesions or bands of constriction about it or to inflammation or congestion within. Ureteral colic is indistinguishable from renal colic: 80% of 131 cases of ureteral stone at the Mayo Clinic had pain referred to the kidney, and appendiceal crises or gall bladder attacks often simulate renal colic. Occasionally the pain due to stone in the lower end of the ureter will be so localized as to be suggestive. On the other

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hand a stone not infrequently becomes lodged in the ureter and produces serious renal damage without giving rise to symptoms of any kind whatsoever. That the size of the stone bears no uniform relationship to the character of the symptoms has been repeatedly observed. This absolute lack of certain correlation between the symptoms and the position, size or even presence of stone in the ureter renders it impossible to determine these three necessary facts from symptoms alone. In certain cases the careful microscopic examination of the urine may prove of considerable assistance. The absence of blood and pus after repeated search is evidence prima facie of the absence of stone. Valuable information is exceptionally gained when the stone lies low in the ureter by a rectal examination. But, until the advent of the X-ray, the diagnoses of stone were always provisional and only confirmed upon exploratory operation.

The danger of ureteral stone is well recognized by medical men. Back pressure, that powerful and silent partner of most urinary infections, is almost always present and ureteritis, pyelitis, pyelonephritis or pyonephrosis is the common sequel of every neglected stone in the ureter, and may gravely increase the burden of renal insufficiency. The early determination of the presence of stone in every suspected case, and, in case stone is found, a knowledge of its position, of the renal change and injury already produced by it and that to be expected from it, if it is not removed, and a knowledge of the chances of its being passed spontaneously, if left alone, are highly desirable. The failure to recognize the need of operation may prove of serious consequence; but to operate upon every patient may be likewise criticized, because, in a great many cases, the stone will either pass spontaneously, or may be dislodged and removed by cystoscopic methods. Every patient with abdominal symptoms indicative of stone must be subjected to special routine methods of examination and exploration, and the problems of diagnosis and of treatment are very satisfactorily and thoroughly met in this field of ureteral stone, in spite of its symptomatic poverty, as the result of these newer methods.

Radiography: Undoubtedly the X-ray is a most valuable and direct method for the localization and diagnosis of urinary stones, but it does not possess just the same value for the revelation of ureteral as of renal calculi. It is important to be familiar with the many sources of error. These may be considered as: 1, errors of technic; 2, errors from the failure of the X-ray to show a stone when present, and 3, errors of faulty interpretation arising from shadows outside of the ureter. Technical defects, the responsibility of the radiologist, will sometimes occur even in the hands of the most expert. Their nature is readily suspected but the fact of their occurrence renders interpretation of plates both more hazardous and difficult. Correction and control is insured by a repetition of the picture which is the ideal procedure in every case irrespective of obvious defects.

Radiography has its limitations and will fail to show stone in a certain proportion of cases even with repeated and most careful technic. Radiologists' opinions of their respective abilities to detect ureteral stone differ considerably. Some few are positive of their ability to show stone in every case. Others omit only a few stones of pure uric acid or cystin composition. Many report their failure to detect a small percentage of all kinds of calculi. Surgeons have frequently removed ureteral stones which previous X-ray had not revealed. Kelly thinks the error due to this failure to be at least 5%. In a recent study of the ureteral stone cases of the Johns Hopkins Hospital J. T. Geraghty and the writer found that in over 15% careful and repeated X-ray examinations had been negative. The identification of the stone in these cases missed by the X-ray was positively made in every case. Two were analyzed and neither contained uric acid or cystin. This estimated failure of the X-rays (one-sixth of the cases) is, furthermore, probably low inasmuch as many cases of suspected stone were not submitted to any other means of identification than the X-ray. Such an evident fallibility in radiography emphasizes the need of further study in every suspected case with negative X-ray reports, which are insufficient alone to exclude stone. The continued absence, however, of microscopic blood and pus with a negative X-ray finding is fairly conclusive.

Faulty interpretation of shadows in the region of the ureter (for stone) have been due to defects in the plate, to appendices epiploeicae, to enteroliths, to phleboliths, to bismuth, scybala or foreign bodies (Blaud's pill) in the bowel, to calcareous deposits in the appendix, seminal vesicles or chronic inflammatory tissues, to calcification of glands or muscle, or to atheromatous patches on the aorta or large vessels. Most of these by reason of their character, shape, position and direction of axes are easy of differentiation. Calcified gland or phlebolith shadows frequently present real difficulties. These occur most commonly in the pelvis (II and III of Fig. 1) and inasmuch as about 70% of ureteral stones are found below the pelvic brim the intra- or extraureteral position of a shadow here is an extremely important question. The glands along the common iliac vessels frequently become calcified and will appear in the X-ray negative as irregular and patchy shadows, usually multiple, along the pelvic brim (II, Fig. 1) and the mesenteric glands when calcified occasionally show in irregular patches along the line of the transverse processes of the vertebral column. The plexus of veins at the base of the bladder on either side will often contain numerous or single phleboliths which will mimic stone shadows in the region of the ischial spine (III, Fig. 1).

Position of Ureteral Calculi. The position and course of the ureter has been repeatedly shown to present marked normal variation, which the variability in the mechanics of X-ray photography often exaggerates. Schmidt and Kolischer first emphasized this and from a study of normal cases concluded that it is impossible to state the intra- or extraureteral position of shadows without some means of identification. The ureter may lie any-

where between the mid part of the spine and a line perpendicular to the middle of the crest of the ileum in its abdominal portion while the occurrence of so many extraureteral shadows in the pelvis renders its pelvic uniformity unimportant. The relative frequency of stone in the different portions of the ureter is of anatomical significance. Albarran early noted the fact that the ureter is not a tube of uniform diameter. It presents sphincter-like thickenings of the circular muscle at four points in its course; 1st, at the point where the pelvis of the kidney narrows down to become the ureter, the uretero-pelvic constriction; 2nd, at the point where the ureter crosses over the iliac vessels to enter the pelvis, the superior strait constriction; 3rd, at the point of entrance of the ureter into the bladder, the vesical constriction, and 4th, at the ureteral orifice itself, a point seldom mentioned, but one of importance inasmuch as it may be so contracted as to securely obstruct a stone which has successfully passed the whole length of the ureter up to this final point. These four narrow portions (1st, 2nd, 3rd, 4th, Fig. 1) divide the ureter into three segments or pouches, the abdominal, the pelvic and the vesical. Of Jeanbrau's 204 observations of the position of ureteral calculi 29% were in the abdominal, 54% in the pelvic and 17% in the vesical segment of the ureter. Eighty of one series of 100 cases, and 20 of 28 cases of another series, analyzed by Kelly, occurred in the pelvic pouch. (Number in vesical portion not stated.) Of the 39 cases in which the stone was located by the X-ray studied by Geraghty and the writer 12 were in the abdominal, 22 in the pelvic and 5 in the vesical pouch of the ureter (Fig. 1). In other words, 70% were pelvic, which corresponds closely to the statistics of Jeanbrau; (71% pelvic, 29% abdominal). The fact that ureteral stone is rarely ever located by the X-ray in that portion of the ureter corresponding to the shadow of the wing of the sacrum has never received sufficient emphasis. A shadow of stone does not occur here in even one of Kelly's 128 cases. Hurry Fenwick states that he never saw a stone shadow in this portion of the radiograph. One case in our series occurred in the lower edge of the sacral wing and it is much more likely that stones do occur here and are missed in the X-ray than that this portion of the ureter should be so strikingly immune to their retention. Furthermore, the obstruction in several cases which were personally diagnosed by means of the wax-tipped catheter was met at about the distance of this portion of the ureter from the bladder.

Methods of Identification of Shadows. The determination of the position of a shadow with respect to the ureter, as within or without it, is commonly made by ureterography in one of two ways. The ureter may be outlined in the radiogram either by the previous cystoscopic insertion into it of an X-ray catheter (one with wire stylet, impregnated with bismuth or of metal), or by the previous injection, after the usual ureteral catheterization, of some substance into the ureter which is impermeable to the X-rays (as colargoll, cargentos, silver iodide, argyrol, etc.). The injection method has the advantage of giving more complete, and often very valuable, information in regard to an associated abnormal renal and ureteral condition. Either method will usually determine satisfactorily the intra- or extraureteral position of any suspicious shadow. Sometimes, however, a suspected shadow will appear to lie within the ureter when it really lies either above or beneath it. In such a case either a stereopticon picture or the positive evidence of a scratch on a wax-tipped catheter is required.

Methods for the Revelation of Stone When the X-ray Shows No Shadow. To exclude the presence of stone more than a negative X-ray finding, even after most careful and repeated examination, is required, for reasons already stated. Three methods are available for this revelation: 1, The wax-tipped catheter; 2, the intensification of a stone shadow by the previous injection of one of the silver salts, and 3, the visual demonstration of a stone when projecting from the ureteral orifice or located low in the vesical pouch of the ureter. The wax-tipped catheter was introduced as long as twenty years ago by H. A. Kelly for use with his open-air method of cystoscopy in the female, but it is barely three years since Burton Harris adapted the method to use through the modern closed system of ureteral catheterization in the male. For accuracy in the diagnosis of stone this method excels all others. It is surprising that it has not been earlier and more universally adopted. In seven of the cases of the series already referred to, missed by the X-ray, the diagnosis was made by this method alone, and, even in a fairly clear case, the unmistakable evidence given by a scratch on a waxed tip is always reassuring and welcome. The slowness of its application in the male is due to the technical difficulties of the closed water cystoscope. In the procedure recently proposed by Harris the wax-tipped catheter or bougie is passed into a full bladder and the cystoscope, with the catheterizing telescope in place, is threaded down over it as over a filiform. Naturally the beak of the instrument, in passing through the urethra, must scrape along the catheter (Fig. 2), and the window of the cystoscope, having no obturator, adds additional roughness and difficulty. Very small bougies (preferably Nos. 3 or 4), must be used and even then considerable trauma is unavoidable. There is always danger of scratching the wax tip of the catheter, which is curled up in the bladder and the position of its tip not known, with the beak of the cystoscope when it is pushed into the bladder. And, a still greater fault of the method,—the cystoscope must always be removed before removal of the wax-tipped catheter. To overcome these disadvantages a simple procedure has been used recently in several cases with entire satisfaction. It eliminates the difficulty of threading the cystoscope through the urethra upon the wax-tipped catheter and it permits the removal of the wax-tipped catheter without previously removing the cystoscope. This is a very great advantage. It enables one to pass one or more control waxed tips and thus confirm the findings and

to measure accurately the distance of the stone from the ureteral orifice. It permits an ordinary ureteral catheterization and a complete functional study or the injection of one of the silver salts and a uretero-pyelogram, so that it is possible to obtain complete information at the one cystoscopy to a repetition of which all patients reluctantly consent and many absolutely refuse.

Wax-tipped catheter technic. The Brown-Buerger operating cystoscope is passed into the bladder as for cystoscopy. The obturator is withdrawn, the bladder washed out (cold irrigating fluid should be used so as not to soften or melt the wax) and the operating sheath of the instrument then inserted. A soft rubber urethral catheter which will pass snugly through No. 12 hole of the French scale, usually a No. 10, has been prepared by cutting off its tip and slitting up the end to the proper length of the cystoscope, as shown in Fig. 3. One end should reach to just beyond the lever of the instrument and the other slit so that when the slit ends are turned back they will hold the catheter in this position. A wax-tipped catheter has been inserted backwards into this sheath until its tip is about two inches inside. A rubber stopper with single perforation is threaded back up the wax-tipped catheter to the slit ends of the rubber sheath (Fig. 4). The usual rubber tip (Fig. 5,—1), is too small and a very satisfactory one can be quickly made from the ordinary pipette bulb, as shown in Fig. 5,—2, 3, 4, and 5. The rubber sheath with catheter inside is now passed through the cystoscope to the proper distance and the rubber stopper fastened over the two slit ends spread to opposite sides, thus securely holding the rubber sheath in place and insuring dryness to the cystoscopist (Fig. 6). The end of the sheath should appear in the operating field just beyond the tip of the elevator. The wax tip is now slowly pushed through under direct vision and examined for any defects (Fig. 7). The elevator, which strikes the rubber sheath and not the catheter, is raised (Fig. 6), and the waxed catheter pushed on up safely by the beak of the instrument and into the ureter. The soft rubber sheath thoroughly protects the wax tip in its passage through the cystoscope. It should be well lubricated, both inside and out, so that it may be easily passed through the cystoscope and so that the wax-tipped catheter will easily pass through it. To remove the catheter, after passing it up the ureter as far as desired, withdraw it slowly under direct vision with the lever of the instrument elevated so that when the catheter slips out of the ureter it cannot drop down on to the beak. Because of the rubber sheath the lever will always catch the catheter no matter in what position in the bladder the cystoscope is. As the tip approaches the rubber sheath the elevator is lowered and it passes through stages shown in Figs. 6 and 7 until it comes to lie one to two inches within the cystoscope when sheath and catheter are both withdrawn (Fig. 4). After examining the waxed end a second wax-tipped catheter may be inserted on the same or opposite side, or both ureters catheterized and function estimated, uretero-pyelogram made or whatever study is indicated undertaken, as the cystoscope is still in place.

Intensification of shadow from stone by the previous injection of collargol or other silver salt: This method is applicable particularly to rough or irregular stones which because of their pitted form hold a certain amount of the drug about them to cast a shadow after the rest has drained out of the ureter. It is necessary to take several plates at short intervals after the injection in order to strike the period of optimum adhesion. The procedure may prove valuable in revealing and locating a stone shadow which is missed by the plain X-ray.

Cystoscopy. Stones in the vesical pouch project through the ureteral orifice itself or produce a characteristic bulging of the vesical portion of the ureter which can be readily seen through the cystoscope.

Summary of methods of diagnosis. The safe routine in the examination of a suspected stone case may be divided into two parts: I, The gen-

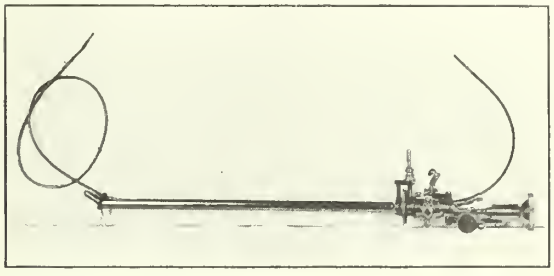


Fig. 2.

eral investigation and, II, The use of special methods of examination. Of importance in the general investigation is radiography of both ureters, both kidneys and bladder, a careful study of the urine, *before instrumentation,* in order to determine particularly regarding blood and pus and an estimation of the total renal function by phenosulphonphthalein which will act as a control and guide in the event a study of separate function is later indicated. If the findings after such a general study are all negative,—neither blood nor pus in

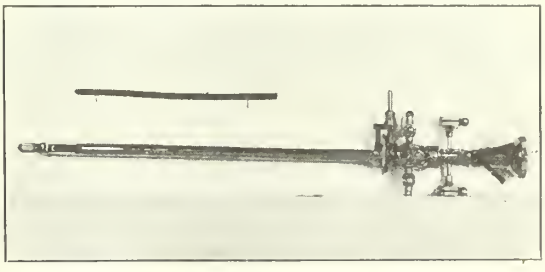


Fig. 3.

the urine, renal function normal and radiographs negative,—further examination is not necessary. In other cases, with a typical history and urine, and a definite radiographic stone shadow, the diagnosis is clear-cut without further study. But in the majority of cases suspicious but indefinite general findings are obtained, and in these cases special methods of examination are required before stone can be excluded or affirmed. In the application of these special methods,—the wax-tipped catheter,

and ureterography,—each case will have to be studied individually and with respect to the previous general findings. The accuracy of the wax-tipped catheter and the ability to use it at the one sitting in conjunction with other cystoscopic methods warrants a greater appreciation of its value.

Fig. 1. A.—A, Diagrammatic Representation of X-ray picture, showing composite position of 39 ureteral stones (irrespective of side), 12 in abdominal segment, 22 in pelvic segment and 5 in vesical segment. I, Line perpendicular to mid-portion of ilium outside of which ureteral stones are never found. II, Common position, dotted line, of calcified glands in the pelvis. III, Common position, dotted line, of phleboliths. 1, Sacral-Wing portion of ureter, between x and x, in which stones are most frequently missed in the X-ray.

B.—Diagrammatic Representation of Ureter with four points of muscular constriction. 1st, uretero-pelvic constriction; 2nd, superior strait constriction; 3rd, vesical constriction, and 4th, ureteral orifice.

Fig. 2. Method of inserting cystoscope over catheter previously passed and curled up in the bladder. Difficulty arises from necessity of passing the beak of instrument along catheter in the urethra, and with the window of the instrument open.

Fig. 3. Soft rubber urethral catheter (No. 10) cut off so that one end projects just beyond the lever of the instrument and the other end slit up so that when the two slit ends are turned back they will hold the catheter in this position.

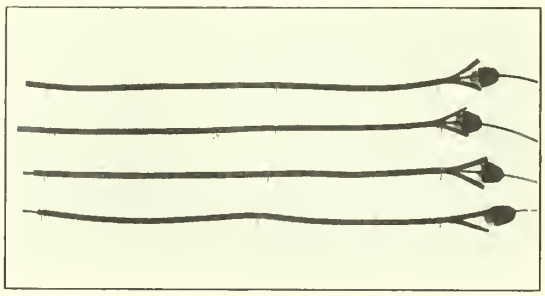


Fig. 4.

Fig. 4. Rubber sheaths with wax-tipped catheters inside ready for use. In the lower two the catheters have been pushed through the sheaths so as to show their waxed tips (the method of examination for scratches, after the catheters have been inserted into the ureter and later withdrawn an inch or so in the sheath and then both drawn out of the cystoscope).

Fig. 5.

Fig. 5. Method of making rubber tip from small pipette bulk. (1) Large rubber tip with single perforation on the market which is too small for use with the rubber sheath. (2) Rubber pipette bulb, 3 cm. long. (3) Rubber pipette bulb cut in three equal parts. (4) First part placed inside of third and fastened with two silk sutures. (5) Bulb perforated with hot needle or pin.

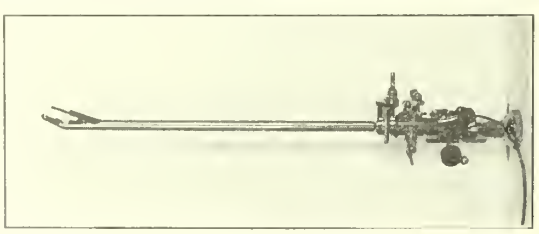


Fig. 6.

Fig. 6. Sheath and catheter as they appear after the rubber tip has been adjusted over the slit ends of the sheath, the elevator of the instrument raised and the wax-tipped catheter pushed through.

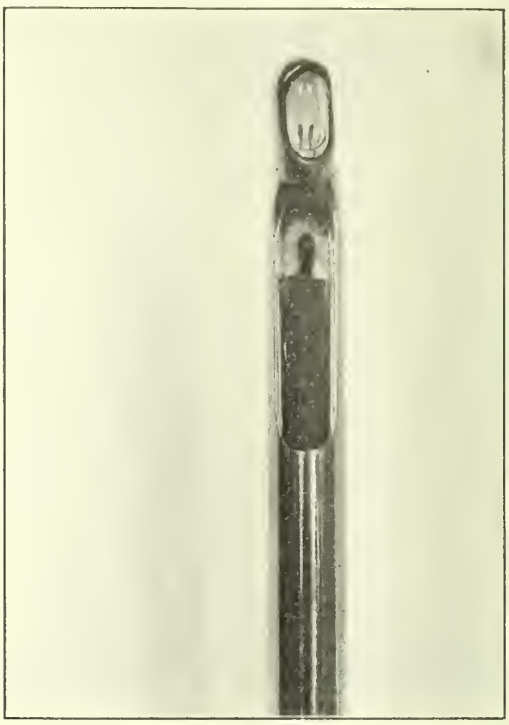


Fig. 7.

Fig. 7. Waxed tip pushed into the field just before elevating the sheath.

Fig. 8.

Fig. 8. Instrument case with five wax-tipped catheters in rubber sheaths ready for use, after sterilization.

Discussion.

Dr. M. Krotoszyner: The subject of this paper is of the utmost importance not only to the urologist but also to the general surgeon. There are several points brought out by Dr. Hinman which mark an advance in the diagnosis of renal calculi. The introduction of the wax-tipped catheter in the manner described in the paper, marks for that delicate proceeding a decided advantage. I personally have so far not been able to obtain in doubtful cases the desired diagnostic aid by the use of this method, but it looks to me as if the technic used by Dr. Hinman will be fraught with success. I also agree with the Doctor that radiographic exposures at different intervals after the ureter has been filled with a shadow-casting fluid may demonstrate a calculus which by ordinary radiography could not be demonstrated on the plate. I have been able, in a very stout man of 45, with a right-sided renal pyuria, to locate a stone by these means. Most important in the diagnosis of ureteral calculus is the point brought out by Dr. Hinman's paper, that a stone in the lower portion of the ureter might not be demonstrable on the plate because it is hidden by the wing of the sacrum. In this connection I wish to

report a case which will best illustrate the diagnostic importance of this point:

A man of 40 came under observation with the usual symptoms of nephrolithiasis: typical left-sided renal colic and blood and pus in the urine. Radiography showed, at first, a characteristic stone-shadow on the left side and a suspicious shadow in the region of the right kidney. Upon a second radiographic exposure a stone-shadow was visible on the left side alone, and these findings were corroborated by a third set of pictures. Upon exposure of the left kidney no stone was found, although the organ was split from pole to pole. About a week after nephrectomy, a hemorrhage from the operated kidney occurred, which was of such severity that the removal of the kidney was taken into consideration. Fortunately, though, the hemorrhage stopped gradually and the patient left the hospital about a month after the operation, with a closed wound. The patient reentered the hospital about two months later on account of a very severe renal colic on the right side. His urine was clouded by pus and blood; irregular septic temperature; at intervals pains in the right lumbar region, connected with chills and fever; X-ray plates negative for stone; cystoscopy showed a fairly normal bladder, ureter catheter on right side inhibited about 5 cm. from renal pelvis, no urine from right ureter. After two or three radiographic exposures, which were negative as far as stones were concerned, a little calculus-shadow appeared in the region of the right ureter above the brim of the pelvis. When on the next day a radiographic exposure was made with a shadow-casting ureteral catheter which, by the way, could be passed to the pelvis of the kidney, no stone-shadow was visible on the plate. A few days later the introduction of the ureter catheter was only feasible to about 2 or 3 cm. above the ureteral opening, which appeared to be congested and swollen. Finally, after several days of more suffering, chills and fever, the patient passed a stone corresponding in size and shape to the shadow which had been demonstrated on the plate above the brim of the pelvis.

Dr. W. P. Willard: I think one method that is worthy of trial is that of Cunningham—a ureteral catheter threaded with sound-conducting wire which is attached to a small ear phone. I saw a case demonstrated in which you could hear plainly the scratching against the stone. One point brought out which is interesting is the ease with which you can pass a stone in the ureter with the ureteral catheter. Being able to catheterize the ureter with no obstruction means nothing; on the other hand, you can attach no significance to the stoppage of the catheter in the ureter unless you have additional evidence. As far as blood in the urine is concerned, I do not know why we should consider that more significant of stone than of tuberculosis or other conditions.

Dr. A. B. Grosse: I certainly agree in toto with the remarks made by Dr. Hinman. The point that calculi in certain positions are not demonstrable by X-ray explains the remarks made by me on the floor of this Society in 1907, when I demonstrated a number of calculi cystoscopically removed, namely: "I am surprised at the relative frequency of cases which clinically and microscopically impress one as ureteral calculi which are not demonstrable by X-ray and for the symptoms of which I can find no other explanation." In one of these cases a few months later a calculus was passed.

The wax-tipped catheter in my hands has been useless, as I have used the Nitze cystoscope, but the method of the reader practically overcomes error from this source.

I might cite here a case of some interest. Unilateral spasmodic attacks of pain with pus and blood present in the urine at intervals. X-ray plates and numerous cystoscopic examinations and ureteral catheterizations failed to elicit anything except that during the attacks unilateral showers of calcium oxylate were demonstrated. This condition has remained to date, with the exception of the attacks occurring less frequently.

Dr. Hinman, closing discussion: The interpretation of the scratches on the wax tip is really a refinement in diagnosis and of the greatest importance, and is only to be relied upon where the greatest attention is paid to detail. The least doubt in regard to the origin of a scratch destroys its value completely. Of course the tip can be examined as it enters the field of the cystoscope to see if scratches have been obtained in its passage through the instrument, but fine feathery scratches are often produced by stone which only a powerful hand lens will make visible. The wax-tipped catheter method, to be of positive value in the diagnosis of stone, must be of such technic as to absolutely preclude the possibility of extraneous scratches. Obviously the finding of a perfectly clean and smooth tip after passage up the ureter indicates by any method the absence of stone.

The significance of a clear urine is really very great. The finding of blood or pus is insignificant in itself, but the continued absence of blood upon repeated microscopic examination is very good evidence that stone is not present.

The case and the X-ray plates presented by Dr. Krotoszyner are very interesting and add additional proof of the idea that the wing of the sacrum is the important cause of the many failures of the X-ray to reveal ureteral stone. The first plate shows a shadow above the superior strait; the second plate, taken several days later, is negative; and the third plate shows the shadow below the pelvic brim, the stone in descending being missed over the sacral wing.

STATE SOCIETY

ANNUAL MEETING

1916

FRESNO

THIRD WEEK IN APRIL

DO NOT FORGET

PRELIMINARY REPORT ON THE FINDING OF ARSENIC IN THE CEREBROSPINAL FLUID FOLLOWING INTRAVENOUS ADMINISTRATION OF NEOSALVARSAN.*

By J. HENRY BARBAT, M. D., San Francisco.

I wish first to call attention to the fact that an ordinary dose of neosalvarsan contains about 246 mgm. metallic arsenic, making in a man weighing 70 kilos, a proportion of 1 to 20,000 arsenic in the blood.

George Hall, in an article in the A. M. A. for April, states that arsenic has not been found in the cerebrospinal fluid after the administration of sodium arsenate, sodium cacodylate, salvarsan, and neosalvarsan, except in two cases where salvarsan was given in secondary lues. He does not state the amount of arsenic found.

J. J. Viton of Buenos Aires states that arsenic, or drugs generally, can be caused to pass into the cerebrospinal fluid by injecting irritants into the canal. He injects sera or a Sicard solution which contains cyanide of mercury.

Swift and Ellis inject 12 cc. of the blood serum which is taken one hour after the administration of a dose of salvarsan. Giving the 12 cc. full value, they cannot get more than a proportion of 1/100,000 arsenic in the cerebrospinal fluid.

It occurred to me that the reason that drugs do not pass from the blood serum into the cerebrospinal canal, is that it is already filled, and unless it is emptied, or the original contents caused to absorb, we can not expect to find our remedies passing through the choroid plexus or the ependymal cells. If we empty the canal at a time when the blood serum contains the maximum amount of the drug, the new fluid which is poured out should contain the maximum amount of the drug which will pass through the choroid plexus and ependymal cells.

In the case which I have to report, the patient was given a full dose of neosalvarsan, and 43 cc. of the cerebrospinal fluid was immediately withdrawn. This fluid was not examined for arsenic, but showed a very strong Lange reaction for paresis. Four days afterward he received another dose of neosalvarsan, and 30 cc. of the cerebrospinal fluid was immediately removed, of which a portion was submitted to Dr. Felix Lengfeld for examination; he reported 1/100,000 metallic arsenic.

My reason for using neosalvarsan was based on an article which appeared in a French journal, stating that neosalvarsan remains in the blood serum and does not enter the red cells, and remain in the red cells, as does the old salvarsan. Therefore, the neosalvarsan will pass in and out of the individual in three to four days, whereas old salvarsan will remain three or four weeks. Work is now being done to test the permeability of the meninges to iodine, mercury and arsenic.

I report this case so that more work may be done along these lines.

*Read before the San Francisco County Medical Society, October, 1915.

THE PANAMA-PACIFIC DENTAL CONGRESS.

By LEANDER VAN ORDEN, M. D., D. D. S., San Francisco.

The Panama-Pacific Dental Congress, held at the Auditorium in San Francisco from August 30th to September 8th, inclusive, was the culmination of work initiated five years before. It defeated the pessimists by holding attention to the close of the afternoon of the tenth day. Dr. Truman W. Brophy, whose opportunities to observe have been many, is quoted as having written that the Congress exceeded in scope and quality any that he had attended. Thirteen hundrd were registered and three hundred more purchased memberships. But for the war a large foreign attendance might have been anticipated. Europe's sole delegate was Dr. Aguilar from Madrid. Australia, Cuba, Peru, Guatemala and San Salvador sent a few representatives. Of the one hundred and thirteen papers offered to the ten sections the larger percentage were read and, in many, lantern slides were used. One hundred and seventy chair-and-table demonstration clinics were given. The Dental Museum on the main floor contained transparencies, charts, anatomical specimens, casts and models—contributed from all parts of the world. The Tokyo Dental College sent enlarged drawings of photo-micrographs of tooth roots and their canals, and there was a copy of the Piltdown skull. Over one thousand radiographic films and plates were arranged on racks and cleverly transilluminated, night and day, by electric bulbs, giving a rare opportunity for the study of the teeth and their socket tissues in health and disease.

The topic of focal infection, naturally, had a marked place in papers and discussions and Thomas B. Hartzell, of the Scientific Research Commission, National Dental Association, reported on team work of physicians, dentists and laboratory workers being done in the teaching hospital of the University of Minnesota, where a proportion of cases are referred for dental inspection and control, in the beginning of the treatment.

The papers and clinics on pyorrhea alveolaris attracted the possibly greater attention during the session and one evening was given up to a public lecture on the subject, with motion pictures.

In opening the discussion on "Arthritis Deformans Due to Pyorrhea Alveolaris and Faulty Bridge-work," Dr. Harry M. Sherman of San Francisco spoke of the need of co-operation between physicians and dentists in cases of that nature and, in a kind spirit, prophesied increasing fraternal relations between them. In this direction, it should be noted that some work, that may yet be recognized as epochal, was begun twenty years ago by D. D. Smith of Philadelphia by the thoroughgoing cleansing and polishing of the exposed tooth-surfaces through persistent monthly treatments. He noted recoveries from serious disorders in a sufficient number of his one hundred and twenty cases to justify their publication before societies and in journals. The revelations of roentgenography and recent bacteriological and clinical findings may bring to Dr. Smith's reports

the credit they seem to deserve. It is conceded that dental caries and pyorrheal socket conditions have their causation largely in dental uncleanliness; it is also beginning to be understood that the enamel of the teeth of civilized beings is rarely smooth and that its lustre is only partially developed. There is, unfortunately, a superstitious fear on the part of many that scaling and polishing the teeth may injure the enamel. The reverse of this being the case, and having the teeth *slippery* being one of the most certain preventives of dental disease, with their sometimes serious sequelae, it may prove that physicians, through encouraging special and home care of the exposed tooth surfaces, and especially in the very young, will be able to add still another merit to their credit in the care of mankind.

EXTRACTS FROM IMPROMPTU TALK AND RADIOGRAPH EXHIBIT. PANAMA-PACIFIC DENTAL CONGRESS, AUGUST-SEPTEMBER, 1915.

By JOSEF NOVITZKY, D. D. S., San Francisco.

We hear much of medication by way of the blood stream these days. Vaccines, emetin, mercury, almost anything is shoved into the blood stream for the cure of bone lesions.

This treatment, gentlemen, in the handling of pyorrhea is absolutely absurd. Treatment of this kind, even if it were correct, would belong to the field of medicine and not dentistry.

In many pyorrhea cases the intelligent use of the radiograph will show or indicate bone sepsis.

There is absolutely no question in my mind, but that the necrosed structure, whether it is in the jaws or in the upper air passages, may be contaminating the entire blood stream of the part. The blood supply does not reach the terminal parts in full volume, or it may be the actual means for the access of infection. The fact remains that such environment would be favorable for the development of suppurative conditions, even if they do not act as the direct cause.

It will readily be seen then, that the attempted cure of a pyorrhea in the anterior part of the mandible, associated with a necrosed area in the body of the bone, would not be along the lines of scaling the teeth, or the introduction of drugs, or vaccines into the blood stream.

What is indicated, is surgery, drainage, thorough ventilation, and immobilization—putting the teeth in splints and treating them as you would treat a fracture.

We are constantly looking for the elixir of youth, something that will clean up things at one fell swoop. You are not going to find it. A little intelligence is all that is indicated in pyorrhea cases. I do not believe that any certain organism can be blamed for the destruction. I have yet to find a pyorrhea case, one that constantly comes back to you for treatment, that is not intimately associated with sepsis some place in the jaw, or upper air passages. You can not get a permanent cure until you clean up the cause of it, be it what it may. If it is embolic from a septic center in jaw or air passages, causing metastatic suppuration in remote parts, whether they are teeth afflicted with metastatic suppurative conditions, or whether it lodges in a joint and causes an arthritis, I repeat, it is absurd to treat the symptoms by way of the blood stream, without a removal, or attempted removal of the direct cause. I am not referring merely to those cases caused by obvious prosthetic irritation, be it in the form of a filling, crown, bridge or plate; it does not matter.

In every case, to attempt the eradication of the cause is the first thing to do, and in the name of all that is righteous give the part an opportunity of ridding itself of its natural filth and secretion.

Pyorrhea when once it reaches the acute stage with fibrous degeneration of the sockets and resorption of the alveolus, is practically hopeless as far as a cure is concerned. We cannot now immobilize the parts. The patient must have function; he must use his teeth. We know that it would be impossible to secure union in an infected fracture while it was swinging about at random. We have the same problem to contend with, in this advanced pyorrhea work.

We have seen the periosteum loosen and detach itself from the long bones of a horse after hard galloping on hard ground. Very much the same thing happens with the few teeth that are left in position, in advanced pyorrhea cases. The forces of occlusion being centered on a few teeth soon cause inflammatory changes in sockets and alveolus. We can not treat this the way it should be treated, by immobilization, etc.

Therefore, I say again, we must remove the cause of these conditions *before* they bring us to this extremity.

Coming back to the radiograph, this picture shows rarefaction many years after the extraction of dead teeth. This work as done at present should be considered malpractice.

The extraction of such teeth should be preceded by radiographs of them. If the plate shows any involvement of the process, or the jaw proper, the gums and periosteum should be lifted and retracted, the necrosed bone removed with the chisel, gouge, or curette and the teeth removed.

In many cases you will find the process discolored, with areas of disintegrated bone involving the apical region. If the tooth is a molar, the septum will frequently be involved. Immediately below this, the bone will be considerably thickened, the structure losing its cancellous appearance.

Now, how would it be possible to foretell all this, without the radiograph? If you proceed to operate without first knowing whether there is any jaw involvement, you might find after endless ripping around, that there were no pathological conditions present.

You will say, "Well, we have 'pulled' such teeth (or broken them off), for many years. The gums heal over, sometimes a little slowly, it is true, but in a few months' time the gums are pink and firm and we don't see any bad results."

Of course, you don't!

It usually takes some years before the patient makes very emphatic moves for assistance, and you

probably would not recognize the lesion (whatever it might be) as being in any way related to a piece of necrosed jaw, even if you knew the necrosed area to be present, which you probably would not.

The radiograph will fail to show anything in many of these old cases, due to the thickening which invariably takes place.

Some years after the extraction, an exploratory operation, if carefully done, under local anesthesia, will generally show mushy structure.

The extraction of the dead tooth will clean up the trouble in some cases and part of the trouble in others. But in a certain percentage of cases you are allowing the patient to fight out the balance of the disorder, and that is wrong. It is wrong if only one per cent. comes to harm through it, and I have reason to believe that the percentage is very much higher.

Here is a typical case, these three radiographs spread over five years' time:

The first one shows an area of rarefaction involving the dental canal. The second shows the case after operation, the entire body of the mandible being removed down to the dental nerve, which had long since disappeared in company with the blood vessels. The third plate, three years later, shows new bone with practically a normal size mandible. The canal of course is obliterated. This man was seen in consultation with Dr. Von der Lieth. His Wassermanns were all negative. He had absolutely no systemic taint that could be responsible for this trouble. There was no history of industrial poisons. He had been gone over very carefully by his medical advisers, with no definite findings. He had some dead molars extracted about eight months before the trouble began. The gums closed over the sockets slowly, but eventually the parts were firmly united. Some months after, he had a swelling over the inferior dental foramen, and punctured it with his finger nail. (The pus drained for many months from this foramen.) Pain was excessive, but finally went away, leaving his lower lip numb on one side.

There are several other cases here, emphasizing this point of retention after tooth extraction.

The inferior dental canal involvement, with drainage from the inferior dental foramen, is a very important point. This complication I have observed in numerous cases in more or less degree, both chronic and acute.

I first called attention to this fact in March of this year. Since then I have had the good fortune to come in contact with a few more of these dental canal cases, with inferior dental foramen drainage. This condition if kept in mind will explain some of the chronic and acute tonsillar inflammations. Septic matter may drain from infected teeth, through the root apices directly into the dental canal, thence backward to the inferior dental foramen directly into the tonsillar region. The molar root ends, in many cases, being so close to the dental canal that drainage from these teeth has direct access into the dental tube.

Many indurations of the parotid, submaxillary and sublingual regions, serious and otherwise, have been demonstrated to be due to this drainage. The infectious matter does not always drain down the tissue planes of the neck, neither does it always follow along the mylohyoid groove to the submaxillary gland. Much depends on the amount of pus and gas pressure and also the rapidity with which the suppuration is initiated.

Parotid indurations have been traced to a septic dental canal.

Bell's Palsy, either alone, or in conjunction with induration of the glandular structures of the anterior part of the neck, floor of mouth and angle of the jaw, has been frequently observed. There is no doubt but that many of the Bell's Palsy cases (that is, the typical paralyses of the facial terminals) can be demonstrated to be due to septic irritation from a suppurating dental canal.

The periosteum of the ascending ramus is not very adherent. Pus assisted by a small amount of gas pressure, coupled with the movements of the muscles and ligaments covering the inner side of the ascending ramus, could well spread the infectious matter backward and upward as well as downward. There is no doubt that these movements would aggravate the extent of the trouble. Witness the efforts made by the body forces to localize the infection by sticking the inflamed structures fast, and the board-like rigidity of the masticatory muscles preventing their function and spread of the infection.

Bell's Palsy has been noted in some cases with an absence of induration, either of the Ludwig's angina type, or the milder form. The septic canal, however, was present. Paralysis was ushered in by exposure to cold. The fact remains that the septic jaw undoubtedly lowered the vitality of the part, if it did not cause the condition directly.

Whether or not the facial nerve has any connection with the inferior dental, remains to be worked out at some future time. Anesthesia of the facial has been observed in injecting the inferior dental at the mandibular foramen. This was very noticeable in a case where more than the ordinary amount of novocain solution was used (8 c. c.). Anesthesia of the mylohyoid, lingual, facial, and finally the inferior dental was secured. The dental nerve had probably become thickened from septic irritation or was actually inflamed and did not take up the solution readily. If in these injections, the needle is placed close to the posterior border of the ascending ramus, it would be close to that part of the facial trunk passing through the parotid gland. Anesthesia of the seventh nerve would then take place, independently of any connection with the inferior dental branch of the fifth. If the anesthetic is deposited at the mandibular foramen in amounts of from six to eight c. c. (2 c. c. is ample for the average inferior dental anesthesia) and through the looseness of the covering soft parts, the parotid region and the seventh nerve becomes infiltrated. It stands to reason that septic drainage from this foramen, in much less amount, would have the same opportunity for access to the facial trunk that our injections have in some instances.

The diagnosing of troublesome molars is not always easy, even with the help of the radiograph.

In some cases the radiograph shows the rarefaction in the cancellous bone. But in one case that I have in mind, the radiograph showed merely a thickening and blurring of root outline with apparently direct contact with the dental canal. The tooth was opened with the drill and found to be dead. A very small amount of greenish pus and some odor was noticeable; no destruction whatever appeared in the bone. The septic matter in this case was apparently taken up from the dental tube by the blood stream. Arthritic lesions of the finger joints were present. After tooth removal, the root membranes were found vital, the root ends, however, were discharging into the canal. There were no symptoms of trouble about the tooth or jaw.

In another one of the chronic cases, root apices were discharging into the canal. A little destruction was seen in the radiograph. The anterior cervical lymphatics were indurated. A myositis of muscles of shoulder and back of neck was present; also a slight buzzing in the ear of the affected side.

The number of septic upper molars discharging under the antral membrane is absolutely astounding, the membrane, in many cases, being intact; and even in those cases with direct perforation into the antrum, they are more apt to simulate a chronic course, than an acute suppuration. Many of these cases show little raretaction, and as the pus is generated slowly and probably rapidly absorbed, the condition may escape notice for many years, there being no local evidence of its presence. The teeth certainly do not give evidence of any serious trouble.

I am very glad to state that Dr. Cryer and Dr. Brophy have both called attention to these antral conditions, remarking on the frequency with which these antral suppurations can be demonstrated to arise from septic teeth.

Statistics on the causes of antral infections, gathered by men like Chiari and Hajeck, should be accepted with considerable conservatism. These men, though they are authorities in their own field, have undoubtedly overlooked many cases of obscure dental origin.

There is no doubt but that ideas as to the frequency of antral infections emanating from dental conditions will undergo a radical change in the near future.

BLOOD TRANSFUSION SIMPLIFIED.

By A. V. DORAN, M. D., Vallejo.

The apparatus for blood transfusion herein described will, I am sure, appeal to all as about the simplest one possible. It does away with all cumbersome and expensive tubes and syringes and is easily and quickly made.

All one needs is a wide-mouthed bottle of from six to sixteen ounces capacity, a rubber cork with two perforations, and glass tubing which fits the perforations rather snugly. Also plenty of the following mixture: paraffin 3 parts, white petrolatum 1 part.

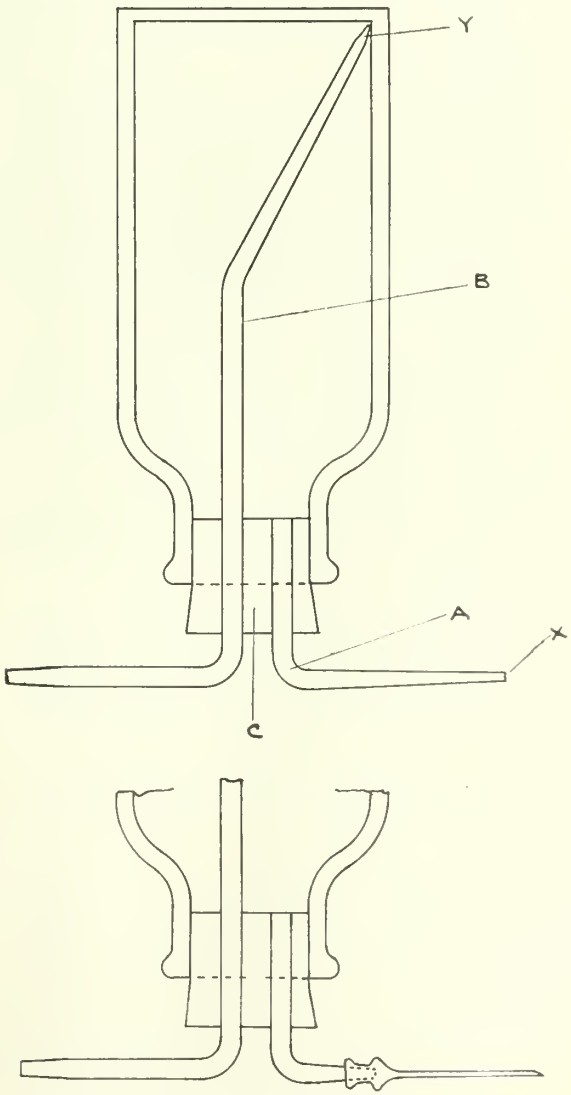
A—Glass tubing drawn into a tip so as to enter the vein easily. This tip can be made any shape desired, but should be long enough so that when the bottle is held over sideways the tip at X will be above the level of the tube B at Y. "A" should end at the inner level of the cork.

B—Glass tubing bent so that it will end at Y.

Procedure: The glass tubes are placed in the proper position in the cork and they, with the bottle, are cleaned with alcohol and then with ether and allowed to dry. They are then sterilized by dry heat. While still warm, the cork and tubes are immersed in the melted paraffin-petrolatum mixture, a quantity of which is poured into the bottle. They are both drained of excess coating. The cork with tubes attached is then quickly inserted into the mouth of the bottle and firmly tied to the neck of the bottle by a piece of tape.

This apparatus is allowed to cool, with the bottle right side up, and is then ready for use.

A number of these pieces of apparatus can be



SAME APPARATUS USED WITH INTRAVENOUS NEEDLE.

prepared and kept in a sterile receptacle, ready for use at any time.

TECHNIQUE.

A tourniquet is placed on the donor's upper arm just tight enough to cause venous congestion. A vein in the region of the elbow is exposed under local anesthesia for about one and one-half inches. This is tied off proximally and a Crile clamp applied distally. If an assistant is handy, a ligature placed about the vein distally, but not tied, can be used to cut off the blood supply when necessary by traction.

The vein is now transfixed, preferably with a cataract knife, and a slit made in it.

The vein of the recipient is prepared in the same way, except that no tourniquet is used, and the vein is tied distally.

The tip of the apparatus is now inserted into the vein of the donor towards the hand and the Crile clamp is removed or the traction stopped, and the blood will flow *up* into the bottle by venous pressure. When the necessary amount of blood has been obtained, the tip is withdrawn and the bottle tilted over sideways until there is no chance for the blood to run out of the tip. The bottle should not be full.

A double cautery bulb is now attached to the tube B. This tube should taper a little so as to facilitate the connection. The tip A is now inserted into the vein of the recipient, towards the heart, and the blood pumped into the circulation. The tip should be full of blood before inserting so as not to force air into the circulation; also, care should be taken that a little blood is left in the tip when it is withdrawn. Very little pressure is necessary.

The bottle can be marked off in C. C. and an accurate account of the amount is kept. Sodium citrate solution can be used if one so desires, as it is an easy matter to draw up a few c. c.'s into the bottle before using.

Tips can be ground to fit any intravenous needle and in this way blood can be taken and injected without the preliminary incisions. The open method is to be preferred.

In conclusion I would state that this apparatus was tried out on the human subject with perfect results. In the experiment, the subject on whom it was tried took the place of both the donor and the recipient. A vein in the elbow region was exposed for about three inches and ligated in the center. The distal half was used to represent the vein of the donor and the proximate half that of the recipient.

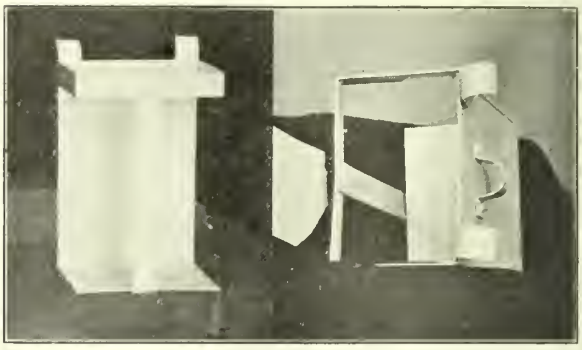
One hundred and fifty c. c. of blood was transfused from the distal to the proximal half in less than four minutes. A small quantity of blood remaining in the bottle after the tip was withdrawn did not coagulate until some time afterwards.

It was observed that having the subject open and close his hand hastened the flow of blood into the bottle, and having his arm hang down stopped the loss of blood from the tip when it was being introduced into the recipient vein.

A PAPER-BAG HOLDER FOR THE RECEPTION OF SOILED SURGICAL DRESSINGS.

By HARRY M. SHERMAN, A. M., M. D., F. A. C. S., San Francisco.

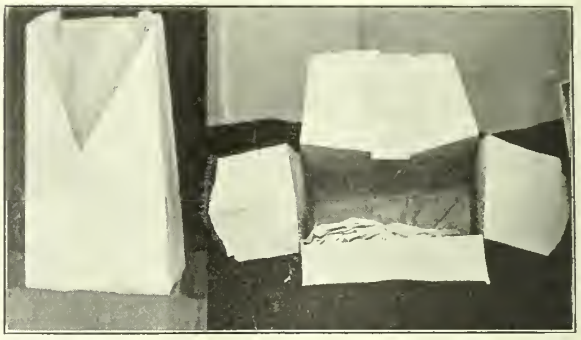
The cleanliness of the method of taking away for destruction soiled surgical dressings in paper bags was interfered with by the difficulty of getting the



Two views of the holder without the bags.

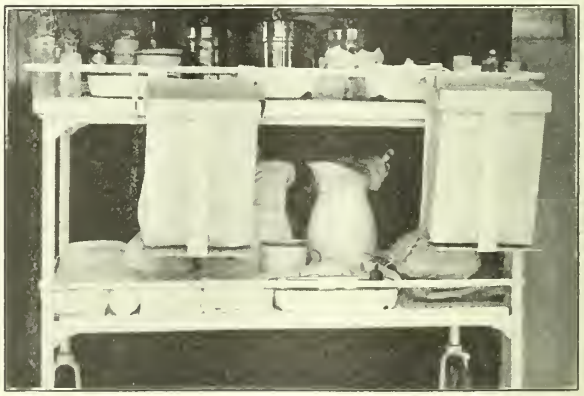
dressings into the bags—a difficulty that the nurse overcame by tearing the bag more or less open, so that it was frequently no bag at all, but only a sheet of paper.

The holder illustrated overcomes these difficul-



Preparation of bags to fit into holder, the flaps folding over the frame.

ties. Made to fit the bag, it holds its mouth properly open, and also supports the sides so that the bag may be easily and more completely filled.



Showing two holders and bags hanging on the side-rail of a dressing table.

The holder and its bag can stand on a table or on the floor or hang by the side of the dressing-stand or by the foot or side of the bed. The con-

struction is simple, and fully shown in the illustrations.

It was designed by Miss Esther Brown, Superintendent of Nurses at St. Luke's Hospital, and was made by Otto Meyer, the engineer of the hospital. It is so convenient and useful and cleanly that it has seemed worth while to report it.

BOOK REVIEWS

Practical Materia Medica and Prescription Writing With Illustrations. By Oscar W. Bethea, Philadelphia. F. A. Davis Co., Publisher, 1915. Price $4.00.

In this book the details of prescription writing are discussed at some length, but the main body of the work consists of a collection of prescriptions, apparently taken from a few American works. These prescriptions are given in both the apothecaries and the metric system. The author does not discuss the value of the combinations or prescriptions he collects, and gives us no means of knowing whether the action of the main ingredient is intensified or lessened by such combination. For those who are trained in pharmacology and are looking for collections of prescriptions, the book may prove of aid. A. C. C.

Eye, Ear, Nose and Throat. The Practical Medical Series, 1915. Vol. 3. The Year Book Publishers, Chicago. Price $1.50.

The 1915 tabloid of concentrated eye, ear and throat and nose knowledge is as practical and useful as its predecessors. It is also subject to the same criticism, namely, that the foreign literature is utterly neglected. This defect is not important as this phase of the subject is easily available in other publications. As an epitome of the advances in the American school its value can not be denied. Many of the Journals quoted are not easy of reference and the abstracts are therefore of considerable practical value.

There are no articles of such epoch-making importance that they deserve a separate review here. The book should always be within easy reach, not only of the specialist, but the general practitioner as well. H. H.

Diseases of the Ear, Nose and Throat. By Wendell Christopher Phillips, M. D. Third revised edition. Published by F. A. Davis Company, Philadelphia. Price $6.00.

It is a pleasure to review such a thoroughly satisfactory book as this one, which is now issued in its third edition. For the purpose for which it is intended, viz.: that of a practical students' book and general work for specialists, the reviewer knows none so good. The arrangement of the subjects is logical and the treatment of them clear and devoid of almost all the useless perpetuation of discarded theories and operations which pad so many works. Of special value is the section on the Influence of General Diseases on the Ear, Nose and Throat. This is a matter that many special workers are apt to lose sight of but which should be constantly in mind. The book is well printed and adequately illustrated. It can be heartily recommended to specialists in this work, general practitioners and students, as being everything to be desired in such a volume.

H. Y. McN.

Outlines of Internal Medicine. For the Use of Nurses. By Clifford Bailey Farr, A. M., M. D., Instructor in Medicine, University of Pennsylvania; Assistant Visiting Physician, Philadelphia General Hospital; Pathologist to the Presbyterian Hospital. 12mo., 408 pages, illustrated with 71 engravings and 5 plates. Cloth, $2.00 net; Lea & Febiger, Publishers, Philadelphia and New York, 1915.

While this is a text-book for nurses and therefore not written to appeal to the medical man who is seeking new text-books, it is not out of place to recommend it most highly to those of us who are interested in the medical education of nurses and student nurses. Doctor Farr has made a very careful digest of the subject and the work, while concise, is eminently adequate for its purpose. G. H. T.

The Medical Clinics of Chicago. Volume I, Number II (September 1915). Octavo of 194 pages, 44 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published Bi-Monthly. Price per year, paper, $8.00; cloth, $12.00.

Contents.

Clinic of Dr. Isaac A. Abt: Tuberculosis Meningitis.

Contribution Wm. Allen Pusey: X-Ray and Epithelioma.

Clinic of Dr. Frederick Tice: Heart Disease in Pregnancy. Purpura Haemorrhagica. Infantilism. Marie's Pulmonary Osteo-arthropathy.

Clinic of Dr. Walter W. Hamburger: Cardiac Neurosis. Auricular Fibrillation. Irregularities of the Pulse.

Clinic of Dr. Robert B. Preble: Case of Mitral Stenosis and Mitral Insufficiency in a Young Girl Without Subjective Symptoms. Splenomyelogenous Leukemia. Syphilitic Aortitis.

Clinic of Dr. Maurice L. Goodkind: Splenic Enlargement.

Clinic of Dr. Ralph C. Hamill: Two Cases of Locomotor Ataxia. Case of Primary Optic Atrophy.

Clinic of Dr. Chas. S. Williamson: Aortic Aneurysm. Tubercular Pleurisy. Tubercular Pleurisy following a Periurethral Abscess.

Clinic of Dr. Chas. L. Mix: Case of Uncomplicated Duodenal Ulcer. Carcinoma of the Stomach.

A Manual of the Practice of Medicine. By A. A. Stevens, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania, Lecturer on Medicine in the University of Pennsylvania. Tenth Edition, Revised. 12mo. of 629 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Flexible leather, $2.50 net.

The preface of the first edition of this manual should be added to this edition in large type. Without the warning words, "that it may serve as an outline of Practice of Medicine" this book can serve no definite purpose. The articles are so brief that they convey only the most meagre details of the subjects discussed. While the author claims to have added the latest knowledge in this edition, much of it is so abbreviated that the reader learns little from it.

In general the book covers the field of medicine fairly well, but certain subjects could be revised with advantage. The chapter on ductless glands is especially weak. The subject of arthritis in its various forms is not well discussed nor is any attempt made at classification according to the recently accepted scheme of Barker.

In reading the chapter on diseases of the heart, there appears to be too much of the old idea of classifying these affections according to the valves involved, rather than attempting to impress the reader with the importance of realizing that the particular form of valvulitis is but one sign of an endocardial involvement with its train of general symptoms.

It would seem therefore that this book might

lead one astray in the realm of medicine unless the reader is fairly conversant with the subjects he desires to study. As an outline it will serve its purpose. Further than that it can have no real value and it may be a source of trouble to the student of medicine. W. W. B.

Diseases of Nutrition and Infant Feeding. By John Lovett Morse, M. D., Professor of Pediatrics, Harvard Medical School, and Fritz B. Talbot, M. D., Instructor in Pediatrics, Harvard Medical School. Coth, 8vo. $2.50. Published September 8th.

This book is the best presentation of infant feeding in English. In fact it would be difficult to find a more masterly treatise in any language. The literature has been gleaned for facts chemical and physical, biological and clinical, but the result is no mere compilation, as many of these facts have been contributed to the fund of knowledge by the authors, whose erudition and experience enables them to deal critically with the vast mass of material the literature provides, to bring it into reasonable compass, to give unity to the valuable, and to reject the unworthy with clear authority. Talbot, who is responsible for those parts of the book that deal with metabolism and the physiology underlying the theory of feeding, is to be congratulated on having dealt with his subject informingly and so clearly that every chapter holds the reader's interest.

The lucid style, the simple and forceful directions in the sections that deal with the practice of feeding and the treatment of nutritional disorders, brings the unexcelled teaching of Morse from the narrow confines of the class room to the needs of the larger body of students in active practice.

The authors are to be congratulated on the matter as well as the manner of this book, which is one that neither medical student nor practitioner can afford to be without. L. P.

Operative Gynecology. By Harry Sturgeon Crossen, M. D., F. A. C. S. Published by C. V. Mosby Co., St. Louis, 1915.

In this volume Dr Crossen has presented a work of great merit which is valuable to both the gynecologist and general surgeon. He states in the preface that he wishes to present the adaptation of a particular method of operation to suitable cases and in his discussions he gives a rational view of the indicated operation as called for by the underlying pathology. The illustrations, 770 in number, are particularly noteworthy as they clearly depict details of technic which aid in elucidating the text which is also clearly and concisely expressed. The chapter on retrodisplacement of the uterus ends with a well drawn discussion on indications calling for one or another of the accepted operations based on the pathology present in the pelvis. Likewise the chapter on prolapse of the uterus and bladder after a clear presentation of the operative technic sums up the indications for the special procedure advisable based on pathology and the period of life of the woman. The chapter on fibro-myoma is well handled, but that on carcinoma of the cervix deserves special consideration as it gives a fuller and clearer description of the radical operation as advanced by Wertheim and his co-workers than any other book, especially in reference to the technic of ureteral management. Pelvic inflammation is treated in an interesting manner and gives the modern views on its management. A considerable space has been devoted to auto and heterotransplantation of ovaries and gives an exhaustive report of the experiments and literature on that theme. The concluding chapters on abdominal section and general technic contain good suggestions which repay their perusal and the medico-legal reports are in keeping with the remainder of the work in interest and value. The whole book is compiled with great care and is a valuable addition to one's library as well as repaying one for the time spent in its careful reading. L. H. H.

A Text Book of Surgery for Students and Practitioners. By George Emerson Brewer, A. M., M. D., Professor of Surgery, College of Physicians and Surgeons, New York; Surgical Director, Presbyterian Hospital; Consulting Surgeon, Roosevelt Hospital, assisted by Adrian V. S. Lambert, M. D., Associate Professor of Surgery, Columbia University; Attending Surgeon, Presbyterian Hospital; and by members of the surgical teaching staff of Columbia University. Third edition, thoroughly revised and rewritten. Octavo, 1027 pages, with 500 engravings and 23 plates in colors and monochrome. Cloth, net, $5.50. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This third edition has been thoroughly revised. Every chapter has been rewritten. Some new ones have been added. Radical changes have been made in the chapters on infections of the hand, diseases of the joints and goiter.

The author has received able assistance from his colleagues on the Surgical Staff of Columbia University. For this work they have been fully accredited.

The old conventional illustrations so often seen in books of this kind are conspicuous by their absence. There are 500 engravings and 23 colored plates which are well chosen. Most of these are taken from the author's own cases. There are a few that would be more valuable with an explanatory note. But in general the idea to be conveyed is so evident that the picture speaks for itself.

The chapter dealing with infections of the hand is especially worthy of comment. Here the anatomy, symptoms and treatment of infection are so clearly set forth that the reader has a helpful guide in one of the most difficult surgical problems.

There are a few typographical errors as "Intracheally" for Intratracheally, but these are of minor importance.

Throughout the style is clear and concise. A proper balance has been maintained. So the book is very readable. The author is to be congratulated for gathering so much information in so small a space. No important points are neglected, nor is the book burdened with unnecessary details. The promise for a single volume text book for students and practitioners has been fulfilled.

J. P. P.

Pathogenic Micro-organisms. (Including Bacteria and Protozoa.) A Practical Manual for Students, Physicians and Health Officers. By William H. Park, M. D., Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, and Director of the Bureau of Laboratories of the Department of Health, New York City, and Anna W. Williams, M. D., Assistant Director of the Bureau of Laboratories, New York City; Consulting Pathologist to the New York Infirmary for Women and Children. New (5th) edition, thoroughly revised. Octavo, 684 pages, with 210 illustrations and 9 full-page plates. Cloth, $4.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

It is not surprising that the authors of this book, who have for years directed the many activities of the Bureau of Laboratories of the Department of Health of New York City, should view the subject of Microbiology from the standpoint of application rather than from that of sys-

tematic description and classification, and it is their treatment of the subject from this point of view that makes this work distinctive, and particularly adapted as a text for the physician and those concerned in public health work. Since however a work of this scope often serves as a point of departure for a more detailed study of some particular subject, it seems to the reviewer, that the meagerness of bibliography impairs its value somewhat.

One finds the usual chapters devoted to general discussion of microbiology, bacteriological methods and infection and immunity, which are quite comprehensive considering the space allotted to their treatment. In the latter subjects controversy has been avoided. While this gives to the subject of immunity an unwarranted appearance of definiteness and simplicity, the desired end of "practical application" is served by not clouding the issue.

In the section dealing with the various pathogenic micro-organisms a number of the chapters deserve mention because of the authority with which the authors speak. Particularly good are those on Tuberculosis, Diphtheria, the Colon-typhoid group, Amaeba, and Rabies. The final section devoted to the bacteriology of water, air, milk and soil; the purification of water; disposal of sewage; disinfection, etc., etc., is full of matter useful for the physician and is an excellent compendium on the subject, for health officers.

The book is well printed and contains not enough typographical errors to call for criticism.

H. E. F.

Syphilis as a Modern Problem. By William Allen Pusey, M. D., Professor of Dermatology in the University of Illinois. Price, cloth, 50 cents; paper, 25 cents. Pp. 129. Chicago: American Medical Association, 1915.

The following review appeared in The Journal of the American Medical Association for Sept. 18, 1915, p. 1051.

This book is a monograph reprinted from the Commemoration Volume issued by the American Medical Association "as a tribute to the medical sciences which made possible the building of the Panama Canal and the Panama Pacific Exposition."

The publication of this discussion of the present status of one of the so-called three great plagues—syphilis, tuberculosis and cancer—is opportune. Two decades ago tuberculosis, the fellow of syphilis in this triad of diseases, was as little understood by the everyday man as syphilis is to-day. In the comparatively brief interval of twenty years, a campaign of education and organized propaganda for the combating of consumption has transformed the situation. The forces of intelligent public opinion and of public and private funds, and the power of disinterested men and women have brought into being a great system of physical and educational aids for the tuberculous which have begun to realize their full possibilities. Against cancer our ignorance limits our capacity for effective control. Yet even in the case of cancer there are large endowments for study, and a consistent campaign for the better education of the public is under way.

Against syphilis, on the other hand, little or no social headway has been made. The confounding of the sanitary aspects of a communicable disease with questions of morals, and the effects of a traditional prudery have stifled advance in the social control of this disease. The United States is conspicuous in this backwardness. In strange contrast with this situation, medical knowledge of syphilis has advanced in the last decade with unparalleled rapidity. At the present time it is safe to rank the strategic position in regard to its sanitary control as equal to that for the control of malaria and yellow fever. In one direction, medicine holds syphilis in the hollow of its hand; two generations of inteiligent attack could see it reduced to the status of a sporadic infection. In the other direction, the unwillingness to act of the public, on whom help depends, has prevented all organized effort for the control of this disease. Syphilis is a sanitary problem, that it must and will be solved by society sooner or later is inevitable. Its importance cannot be exaggerated! It breeds misery and perpetuates it. It is a source of public cost, a drain on human efficiency, and a stumbling block in the progress of mortality and decency whose all-pervading influence is appreciated only by those who work with it all the time. Into this situation, Dr. Pusey's book projects itself with a peculiar force. It considers syphilis from the standpoint of its effect on society; not as a disease which medicine is called on to treat. The whole subject is broadly sketched; its course and its pathology are given in sufficient detail to allow the reader to get a mental picture of the disease. Preceding this there are three chapters on the history of syphilis, the most complete statement of this subject in English, which furnishes a unique historical perspective. The rest of the book concerns the study of the general problems of syphilis; the prognosis of syphilis; syphilis and marriage; the etiology of syphilis, and the prophylaxis of syphilis. In these chapters, such subjects as the relative frequency of tabes and paresis, the effect of syphilis on length of life, the time when the syphilitic may marry, the prevalence of syphilis, its comparative frequency in men and women, the question as to whether or not syphilis is on the increase, and syphilis and prostitution are considered. The whole book is a foundation for the last chapter—the prophylaxis of syphilis. Here the author shows how syphilology has finally arrived at a point where the prevention of syphilis is practicable by sanitary measures. He points out what these measures are, and so furnishes the strongest argument for the inauguration of an organized sanitary attack on this disease.

The work is eminently sane and without sensationalism or exaggeration. It does not affront with needless horrors, nor is it written in the spell-binding style of campaign literature. The book is fitted to serve as a guide to a sustained and effective interest in the problem on the part of intelligent readers. It is not a medical text-book, nor is it a primer. It is intended for the intelligent lay reader, but it may be read with equal profit by the intelligent physician. It considers syphilis from a detached point of view, from which point the physician ordinarily does not think of it. It is filled with facts which are carried through to legitimate conclusions, and from which are deduced practical suggestions, and is worthy of the thoughtful consideration of intelligent men and women.

PATRONIZE

THE

JOURNAL

ADVERTISERS

THE LODGE DOCTOR.*

[A reprint of this poem, evidently read some years ago, has been sent to the Journal recently, and here published with thanks to Dr. Bullard.—Ed.]

By F. D. BULLARD, M. D., Los Angeles, Cal.

When the thrifty-minded grocer
Mixes with his sugar sand,
When the money-chasing merchant
Fixes up a shoddy brand,
When the dollar-loving druggist
Palms his own concoction off,
If they slyly seek to smother
Qualms of conscience with a cough,
One excuse they're sure to offer,
Though a cheap and shop-worn cry:
"Since the other fellow does it,
To keep even so must I."

When the weaver interlaces
Strands of cotton in the silk,
When the farmer intermingles
Handy water in the milk,
When the sly and tricky jockey
Sells a man a balky horse,
If perchance from guilty conscience
Wells up in his heart remorse,
He will lull the new-born feeling
Fast asleep and softly sigh:
"Since the other fellow does it,
To keep even, so must I."

When the steerer shows a sucker
Where to play a quiet game,
When he cheats at playing poker
Till the jay forgets his name,
When the bar man ladles whisky
To the poor besotted fools,
When the landlord rents his houses
To impure and vice-soaked tools,
If the people raise objections,
This lame answer bears the brunt:
"But the other fellow'll do it
Just the same, sir, if I don't."

Now the poor lodge-ridden doctor
Pleads the same old weak excuse,
Though he knows that contract practice
Leads to more and more abuse,
For it steals his colleague's patients,
Makes himself to be a sneak,
On his back it puts this label:
"Taken for two cents a week!"
So whene'er he makes a visit
To a brother of the lodge,
He must stultify his conscience
With the "other fellow" dodge.

If to this you raise objection
He will peep the old reply:
"Since the other fellow does it,
To keep even so must I."
Or perchance the answer varies,
He'll exclaim in accents blunt:
"But the other fellow'll do it
Just the same, sir, if I don't."
So I quaff to his confusion,
I will drink a proper toast—
Though perhaps such bad reflections
You may think were but a roast—

Here's to that foolish M.D.,
Who would for a dollar agree
To doctor a lodge
For a livelong year,
And never to dodge
Though the work be severe;
May he ever scamper
His patients to pamper
At all hours of the day and the night!
For hives and for phthisic
May he ever give physic
To people who call him for spite!

* Read at the meeting of the Southern California Medical Society.

SOCIETY REPORTS

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of September, 1915, the following meetings were held:

Section on Surgery, Tuesday, September 7th.

1. The Standardization of Fracture Records, as formulated by the American Surgical Association and adopted by the American Medical Association. T. W. Huntington. Discussion by Harry M. Sherman.

General Meeting, Tuesday, September 14th.

1. The Treatment of Syphilis of the Central Nervous System, with especial reference to the administration of mercurialized serum intraspinally. J. M. Wolfsohn.

2. Notes on Syphilis of the Central Nervous System. T. G. Inman. Discussed by W. T. Cummins, R. B. Scheier, W. F. Schaller, H. J. Nichols, M. B. Lennon, W. E. Stevens, J. M. Wolfsohn and T. G. Inman.

3. Routine Radiological Demonstration of Gallstones. C. W. Lippman. Discussed by I. W. Thorne.

Eye, Ear, Nose and Throat Section, September 28th.

1. Traumatism of the Brain. Alanson Weeks. Demonstration of specimen by W. F. Schaller. Discussed by C. F. Welty, Emmet Rixford, H. C. Naffziger, Stanley Stillman, K. Pischel, H. B. Graham, and Alanson Weeks.

2. Operative Technic in Carcinoma of the Antrum. Stanley Stillman. Discussed by Emmet Rixford, H. B. Graham and Stanley Stillman.

3. Treatment of Fractures of the Superior Maxilla. Emmet Rixford. Discussed by K. Pischel, J. T. Watkins, Cullen F. Welty, Stanley Stillman and Emmet Rixford.

TULARE COUNTY.

It has occurred to us that we have been delinquent in reporting to the Secretary of the State Society the doings of the Tulare County Medical Society; lest it may be thought from this that our society is a "dead one" we will make report of the three meetings.

To begin with this society has had thirty-six members. Attendance at the meetings involves anywhere from ten to fifty miles travel; for instance, at the September meeting four of our five members at Dinuba traveled fifty miles to attend the meeting at Porterville. At our June meeting fifteen were present, at the September meeting sixteen and at the October meeting twenty-six.

The June meeting was held at Dinuba and Dr. J. R. Walker of Fresno was the guest of the society and presented a paper on "Inflammation and Infections of the Middle Ear with Treatment."

The September meeting was held at Porterville with a general discussion of the San Francisco session of the A. M. A. As reported by all who had attended the A. M. A. session the subject of "Preventive Medicine and Hygiene" seemed to have made the most impression and from this it was thought would come the greatest results.

The October meeting was held at Visalia and the society was so fortunate as to have present Dr. Stanley Stillman of San Francisco. Dr. Stillman's discussion of "Infected Wounds and Treatment" proved of very much interest to all and all were sincere in their thanks to Dr. Stillman for his visit.

A. W. PRESTON, Secretary.

SACRAMENTO COUNTY.

Regular meeting, September 21, 1915, at the Hotel Sacramento, 8:45 p. m. Meeting called to order by Dr. J. B. Harris. Thirty-six members present.

Report of cases: Dr. H. D. Barnard reported a case of cavernous sinus thrombosis. Dr. G. E. Simmons reported three cases of fly borne typhoid. Dr. Diepenbrock reported a case of retrocecal appendix. Paper of the meeting then read by Dr. D. R. Powell. Discussed by Drs. W. E. Briggs, M. W. Haworth, G. A Briggs, A B. Diepenbrock, W A. Beattie, J. B. Harris; closed by Dr. D. R. Powell. Report of Board of Directors. Application of Dr. Lay of Jackson, Cal., read. Moved by Dr. W. E. Briggs and seconded by Dr J. H. Parkinson, that this society invite the Northern District Medical Society to meet in Sacramento in November next. Adjourned at 10:10 p. m. F. F. GUNDRUM, Sec'y-Treas.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon therapeutic agents offered to the medical profession. The editor will gladly supply available information on matters coming within the scope of this Department.)

The Salvarsan Situation.

Telegraphic advice under date of September 21st states that Salvarsan supplies in New York are exhausted.

In a subsequent letter from the Farbwerke-Hoechst Company, under date of October 4th, we are informed that, contrary to newspaper reports, no shipments have as yet been released and no immediate action seems to be in sight.

The situation is summed up quite fully in the letter addressed by President Herman A. Metz of the Farbwerke-Hoechst Company to Dr. Thomas H. Norton, Department of Commerce, New York City. We quote as follows:

"The articles in question are Salvarsan ('606') and Neosalvarsan, both made, as you know, by Hoechst Farbwerke under patents of recent issue. Under the English patent law, at least part of the process was carried out in England, and when the war began England took over the German plants and is now running them as Trustee. England also canceled the German rights in these patents, and granted licenses under them to English firms. In France there is no patent law covering articles used in connection with the public health, but, naturally, under the patent laws of this country, the product made in France cannot be imported without violating the patent and treaty rights of the German holders of the American patent.

"For both products mentioned, I have orders in hand from the United States Government for the Army, Navy, Public Health Service, Panama Canal Commission, and Department of the Interior Hospital for Insane. I also have orders from nearly every Army post, penitentiary, and private and public hospital in every State in the Union. I took the orders from the government 'subject to permission by the German government to allow exportation'—the goods to be sent by parcel post, as shipment *via* freight, of course, is impossible. Upon my solicitation, a release from the embargo was granted to the manufacturers by the German government. The goods were sent to Rotterdam to be mailed from there *via* parcel post to the United States. The Dutch postoffice authorities refused to accept the goods without the permission of the British Ambassador. After cables had been sent me from both Holland and Sweden with this information, of which, by the way, I had no knowledge until confirmation by mail reached me, owing to the cancellation of the messages by the censors of the cable lines, I immediately sent Dr. Baketel, manager of my drug department, to Rotterdam with instructions to put into his trunk and bring over as personal baggage the goods which were bought and paid for by me, belonged to me, and in large part were intended for delivery to the United States government.

"This looked easy, but on arrival the doctor was informed that it would be almost impossible for him even to take himself aboard a Dutch steamer without permission from the British Ambassador. He could not put anything into his pocket, much less into his trunk. The Commercial Advertiser of the American Consulate advised him to go to London and place the facts before the British Admiralty. He went to London, and the next cable stated that if the United States government would instruct the American Embassy at London to ask that the goods be released 'on humanitarian grounds,' permission would be given. This cable also informed me that the condition that goods cannot be obtained elsewhere than in Germany would not be construed to cover goods now made in England under patents canceled since the war began.

"The State Department, after inquiry, cabled to the American Embassy at London, asking the release of these specific goods in Rotterdam. Another week passed, and another cable came. This one stated that England would first have to secure the consent of the French government. After waiting four or five days, a cable came which suggested that the State Department should cable to Ambassador Sharp at Paris, asking him to facilitate the permit, as otherwise it might take a month. I went to Washington, and at my solicitation a cablegram was sent to Ambassador Sharp, asking him to request release by the French government. While this cable was being sent, another one was received by me. It stated that the French claimed that these goods were obtainable in France, and, therefore, would not consent to their release.

"Now, let us assume that the French product is as good as the German, which I do not take for granted and which has not been proven, but, even though it were, the French have no patent rights here. The German product is covered by patent issued under treaty between the United States and Germany, which grants German manufacturers the exclusive right to market and sell their product in

this country; and I am bound by contract to handle their product and prosecute all infringements. In the meantime, the goods I paid for are in Rotterdam, and I see by the newspapers that England has agreed that medicinal products 'not made elsewhere' can come out of Germany. I don't believe you can name a single German patented product that is not made somewhere else on a more or less large scale. At any rate, many of such products are patented in this country, and those 'made elsewhere' cannot be sold here under our laws; nor do the Germans under the treaty have to manufacture here any more than American patentees must carry out their processes in Germany.

"This is the situation so far as the release of goods, requested by the American government and for government purposes, is concerned. Just when the stuff is coming I don't know, though our government maintains that we have a perfect right under international law to do business with neutral countries or even with countries that may be fighting, and has written several notes on the subject. Moreover, this situation affects matters relating to public health and the direct welfare of individuals. Germany is willing to give us the stuff; we need it, we have a perfect right to get it, but still are forced to do without it."

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Pantopon (Pantopium hydrochloricum).—A mixture of the hydrochlorides of the alkaloids of opium, containing 50 per cent. of anhydrous morphine hydrochloride. It produces essentially the effects of opium, but, being devoid of opium extractives, may be used for hypodermic administration. It is probably absorbed more promptly and is free from the nauseant odor and taste of ordinary opium preparations. Pantopon (pantopium hydrochloricum) is also supplied as Pantopon (pantopium hydrochloricum) tablets 0.01 gm., Pantopon (pantopium hydrochloricum) hypodermic tablets 0.02 gm., and Pantopon (pantopium hydrochloricum) ampules 0.02 gm. The Hoffmann-La-Roche Chemical Works, New York City (Jour. A. M. A., Sept. 4, 1915, p. 877).

Larosan, Roche.—Calcium caseinate, containing calcium equivalent to 2.5 per cent. calcium oxide. In the treatment of diarrheas of infants a useful food is that made from the curd of milk and diluted buttermilk. The preparation of such a mixture of proper composition being difficult to prepare in a private home, Larosan, Roche is offered as a substitute. The Hoffmann-LaRoche Chemical Works, New York City (Jour. A. M. A., Sept. 4, 1915, p. 877).

Betanaphthol Benzoate, Merck.—A non-proprietary preparation of betanaphthol benzoate (see New and Nonofficial Remedies, 1915, p. 210). Merck and Co., New York (Jour. A. M. A., Sept. 4, 1915, p. 877).

Desiccated Pineal Gland, Armour.—The pineal gland of normal cattle, freed from connective and other tissues, dried and powdered. There is some evidence that there is a relation between the pineal gland and some processes of development and growth. The therapeutic use of the gland is in the experimental stage. Pineal gland, Armour, is also supplied as Pineal Gland Tablets, Armour, 1/20 gr. Armour and Company, Chicago (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Scopolamine Stable, Roche. An aqueous solution of pure scopolamine hydrobromide protected against decomposition by the addition of 10 per cent. of mannite. It has the properties of scopolamine hydrobromide, U. S. P. It is supplied in ampules, each containing 1.2 cc. (1 cc. contains 0.0003 gm. scopolamine hydrobromide). The Hoffmann-La-Roche Chemical Works, New York (Jour. A. M. A., Sept. 25, 1911, p. 1111).

Coagulen, Ciba.—An extract said to be prepared from blood-platelets and to contain thromboplastic substance mixed with lactose, 1 gm. representing 20 gm. dried blood. It is said to act as a hemostatic and to be useful in the treatment of local and certain internal hemorrhages. Solutions of coagulen, Ciba, are used locally, intramuscularly and intravenously. A. Klipstein and Co., New York (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Calol Liquid Petrolatum, Heavy.—A non-proprietary brand of liquid petrolatum, U. S. P., said to be derived from California petroleum and to consist essentially of hydrocarbons of the napthene series. It is colorless, non-fluorescent and practically odorless and tasteless. Its specific gravity is 0.886 to 0.892 at 15 C. Standard Oil Company of California, San Francisco, Cal. (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Tetanus Antitoxin for Human Use.—Marketed in syringes containing 1,500, 3,000 and 5,000 units each. Cutter Laboratory, Berkeley, Cal.

Diphtheria Antitoxin, Globulin.—Marketed in syringes containing 2,000, 3,000, 4,000, 5,000 and 10,000 units each. Cutter Laboratory, Berkeley, Cal.

Anti-Pneumococcic Serum. Marketed in syringes containing 10 cc. Cutter Laboratory, Berkeley, Cal.

Normal Serum (from the Horse).—Marketed in syringes containing 10 cc. Cutter Laboratory, Berkeley, Cal. (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Items of Interest.

Strychnine Not a Cardiac Tonic.—As a result of investigations carried out in the Massachusetts General Hospital at Boston, Dr. L. H. Newburgh concludes that there is no pharmacologic or clinical evidence which justifies the use of strychnine in the treatment of acute or chronic heart failure (Jour. A. M. A., Sept. 18, 1915, p. 1032).

Williams' Syrup of Malt.—The Council on Pharmacy and Chemistry reports that Williams' Syrup of Malt is ineligible for New and Nonofficial Remedies because it is an official article marketed under an unofficial title; because unwarranted therapeutic claims are made for it, and because the claims made are apt to lead the public to depend on it as a curative agent in serious diseases (Jour. A. M. A., Sept. 4, 1915, p. 895).

Micajah's Uterine Wafers and Piso's Tablets.—The A. M. A. Chemical Laboratory has determined that Micajah's Uterine Wafers and Piso's Tablets are practically identical—a mixture of dried alum, borax and boric acid. While Micajah's Uterine Wafers are advertised to the medical profession, Piso's Tablets are a "patent medicine." The claims made to the public for Piso's Tablets are silly and mischievous—but no more so than those made to the medical profession for Micajah's Uterine Wafers (Jour. A. M. A., Sept. 25, 1915, p. 1128).

THE FORTUNE OF A NOSTRUM MAN.

The estate of the late Mr. Eno, the proprietor of Eno's fruit salts, is valued at $8,000,000. This immense fortune has been made out of an aperient consisting of sodium bicarbonate, tartaric acid and citric acid which is extensively advertised, though not in a very flagrant manner. It claimed to be

"health-giving, pleasant, cooling, refreshing, gentle and safe in its action"; "keeps the blood pure." Mr. Eno left large sums to hospitals and other benevolent institutions. His fortune is by far the largest left by a nostrum man and the largest left by any "patent medicine" proprietor (as distinct from those combining therewith the manufacture of patent foods). Among these may be mentioned the following sums: Senator the Hon. George Taylor Fulford, proprietor of Dr. Williams' pink pills (a Canadian), $6,500,000; Mr. Alfred B. Scott, of Scott's emulsion, $850,000; Mr. George Handyside, of Handyside's consumption cure, $700,000; Mr. Robert Dyer Commans, of Areca nut tooth paste, $550,000; Mr. Walter Tom Owbridge, of Owbridge's lung tonic, $550,000; Mr. Thomas Beecham, of Beecham's pills, $400,000.—Journal A. M. A.

AN ENGLISH SUCCESSOR TO A GERMAN NOSTRUM.

In a previous letter (The Journal, Dec. 12, 1914, p. 2145), I described the attempt of a British company to capture the business of sanatogen, as trading in this German nostrum has been prohibited since the outbreak of war. In their latest circular, the company again endeavors to exploit the strong anti-German feeling prevailing in this country as follows: "We are surely right in endeavoring to secure the trade which has hitherto been done by a German, and it is not unfair to take all the advantage we can of the indignation which all Britishers, and indeed all humanity, are feeling against an enemy who does not scruple to use deathly asphyxiating gases to destroy our gallant soldiers and who looks eallously on at our helpless drowning." The following claims are put forward:

"1. Sanaphos is a milk product containing all the constituents of milk with a reduction of fat to suit plethoric patients. It is obtained by a physical process, not a chemical one, and at sueh a low temperature that the vitality of the original milk due to vitamins and enzymes is retained. 2. This is the best basis for administering organic phosphates so as to secure the highest efficiency of a food and nerve tonic. 3. The less foods in their natural state are interfered with by ehemical processes, the better are they adapted for highly nutritive purposes, and this is especially the case with milk. 4. Attempts have been made to establish that casein is the most important constituent of milk; this is an obvious fallacy, because on this basis infants would do well on cheese. Casein is a chemically separated substance derived from milk, and it does not supply the body's complete needs. 5. Clinical evidence extending now for over six months abundantly supports the view that sanaphos is the most attraetive and effective recuperator of nerve and energy. Its uniquely favorable effect in sleeplessness, cured without drugs, bears remarkable witness to this."

It is remarkable that the circular containing these absurd claims, quite on the old lines, is addressed not to the public, but to physicians. The motto of the nostrum man is evidently toujours l'audace.

THE SO-CALLED NEW ANTISEPTIC.

Recently the newspapers have eontained announcements of a new antiseptic or germicide that has proved, or is to prove, of great value in the treatment of the wounded in the present war. Credit for its discovery is given to Drs. Carrel and Dakin.

The antiseptie referred to is that which Dr. Dakin of the Herter Laboratory, New York—now serving as bacteriologist in a war hospital at Compiègne in France—announced in a paper read before the Aeadémie des sciences in Paris. It is made by the well-known process of adding sodium carbonate to a solution of chlorinated lime. The mixture is thoroughly shaken, and after half an hour the liquid is siphoned off from the precipitate of calcium carbonate and filtered through cotton. To this clear liquid, sufficient boric acid is added to make the preparation neutral or acid, the amount required being determined by titration with phenolphthalein. Such a solution was found to kill staphylococci in two hours.

According to the British Medical Journal, about a year ago Professor Cohen, of the University of Leeds, England, entered into communication with Dr. Dakin, a former student, regarding research on antiseptics for surgical use. The arrangement was that the substances elaborated by Professor Cohen should be tested bacteriologically by Dr. Dakin, and that the most promising should be tried clinically by Dr. Carrel.

At about the same time, under the auspices of an English medical research committee, a similar research by Prof. Lorrain Smith, with the assistance of Professor Drennan of the University of Otago, N. Z., Dr. Rettie, a chemical expert, and Lieutenant W. Campbell of the British army medical corps, was undertaken in the University of Edinburgh. Their results were reported in the British Medical Journal. The substance which they prepared was made by rubbing up chlorinated lime to a fine powder and mixing it with an equal weight of powdered boric acid. The ideal antiseptic for the field, they concluded, was a dry powder to be applied direct, which, it was believed, has advantage over a solution because it is more portable, and water is often not procurable.

Chlorinated lime, the basis of the so-called new antiseptic preparation, is well known as a powerful disinfectant. Its alkalinity, however, makes it destruetive to living tissues except in dilute solution. The same may be said of solution of chlorinated potash (Javelle water), which has been largely used by French surgeons in the present war, and of solution of ehlorinated soda (Labarraque's solution). The advantage claimed for the new mixture is that the preparation, being practically neutral and unirritating to the tissues, may be applied in greater strength than that in which it is possible to use chlorinated lime, Javelle water or Labarraque's solution. Experiments indicate also that the germicidal activity of chlorinated lime is increased by such treatment of the calcium hypochlorite as has been described. Such increase in germicidal activity is generally attributed to the liberation of hypochlorous acid. It has been found that the activity of ordinary bleaching powder is greatly increased by passing through it carbonic acid gas. Any other acid, as boric acid, will do as well. From the chemical point of view, therefore, there is nothing new in this method. That the practical application of such a mixture is not wholly new is proved by an earlier article published by Vincent. He suggested the application to ulcerating and gangrenous wounds of a mixture of chlorinated lime and boric acid.—Journal A. M. A.

CONTROLLING CANCER IN ENGLAND.

Portsmouth was the first municipality in England to undertake a public educational campaign for the control of cancer and it would appear that the measures adopted in 1913 are already taking effect. The annual report of the Medical Officer of Health, Dr. A. Mearns Fraser, for the year 1914, which has just been received, states that there were only 197 deaths from cancer in Portsmouth last year as compared with 230 in 1913. This decrease, which occurs in the face of an increase of population, is hailed with satisfaction by the Portsmouth sanitary authorities as justifying their efforts to reduce the cancer death rate by persuading persons who are attacked with this

disease to avoid delay and to seek treatment before it is too late for more than palliative measures. Dr. Fraser reports that from statements made to him by local men the publication of circulars and newspaper articles by the Health Department has been instrumental in inducing a number of persons suffering from early operable cancer to secure treatment, the result of which it is hoped will be permanent.

When the educational measures were put in force two years ago, the cancer death rate of the city had for a long period been increasing. Twenty years ago the average death rate from cancer in Portsmouth was 6.79 per 10,000 of the population, but in 1913 it had risen to 9.16 per 10,000. In that year the total number of deaths was only 34 less than were caused by tuberculosis. While admitting that the increase in the recorded cancer death rate might have been caused in part by improved methods of diagnosis, the Health Committee of the Portsmouth Town Council nevertheless believed that the present number of deaths was unnecessarily large, and they felt it incumbent to adopt whatever measures might lessen the ravages of the disease. The initiative came from Dr. Charles P. Childe, senior surgeon of the Royal Portsmouth Hospital and a member of the Health Committee of the Town Council. As early as 1906 Dr. Childe in his book, "The Control of the Scourge," had given to the public the benefit of his extended experience with cancer. At his suggestion the Portsmouth authorities in 1913 began a campaign of public education under the official auspices of the Health Department. The methods adopted included the monthly publication in the local newspapers of articles regarding cancer and the printing and distribution of a Health Department circular on the subject. Arrangements were made for periodical lectures to midwives, nurses, and to those engaged in social work in Portsmouth. The Health Department further made provision for free microscopical examinations and reports on suspected cancerous growths in order to assist physicians in immediate diagnosis in the case of patients who were unable to pay for such laboratory service. The experience of the Portsmouth authorities had been that by far the majority of patients who presented themselves at hospitals suffering from cancer exhibited the disease in a stage too advanced to be cured. It was held that the reason for this delay in seeking advice was not as a rule because patients feared operation, but because they were ignorant that they were suffering from anything serious until they began to suffer pain. The fact that cancer at its onset is almost always painless should be widely realized in order that the public may learn the importance of other symptoms which will enable them to recognize the disease in the early stages when it can nearly always be successfully removed by competent surgery.

MEASLES AND WHOOPING-COUGH GREAT FOES OF CHILDREN.

With the opening of the public schools come reports to the California State Board of Health of cases of whooping-cough, measles, scarlet fever and diphtheria. Most people regard scarlet fever and diphtheria with a certain degree of alarm, but measles and whooping-cough are generally regarded as necessities; or at least, as being of minor importance.

Most fatal cases of these diseases occur in children under five years of age, and parents who deliberately expose their children to cases of measles and whooping-cough, in order that they may "catch them and have them over with," are taking a very great risk. During the first five years of a child's life special care should be taken to protect him from such exposures. By deferring these diseases to later childhood, the death rate may be greatly lowered.

The chief difficulty in the control of these diseases lies in the fact that they are more "catching" in the early stages, than later. For this reason, any cough or cold in a child just entering school should be regarded with more or less suspicion, the case should be closely watched, and the child isolated, so that if it proves to be measles or whooping-cough, contact with other children may be prevented.

During 1914, there were 8,852 cases of measles reported to the California State Board of Health, with 150 deaths; and during the same year, 2,595 cases of whooping-cough were reported, with 305 deaths. The tragedy does not lie in deaths alone, however, for the complications that often follow are what give these diseases their deadly character. Some health authorities say that tuberculosis follows measles and whooping-cough more often than any other of the communicable diseases. However this may be, the wise parent exercises every precaution to protect the child from these diseases, until as late a period in childhood as may be possible.

The control of these diseases is largely in the hands of parents. Every case should be isolated as soon as recognized and report made to the local health officer.

To admit knowingly, a child suffering from either of these diseases, to the schools or picture shows or to any public gathering, is a direct offense against all public health regulations.

RURAL CREDITS.

At the Rural Credits Conference held on the Panama-Pacific International Exposition grounds September 21, it was decided to form a state organization to work for the adoption of Senate Constitutional Amendment No. 17, authorizing legislation in regard to rural credits and to cooperate with the State Commission recently appointed and with other agencies, to secure for California an adequate system of rural credits adapted to our conditions.

Frank H. Gould of San Francisco was named as chairman of the temporary organization, and A. L. Cowell, secretary of the San Joaquin Valley Water Problem Association, was selected as secretary. Headquarters have been established at Room 264 Mills Building, and an active campaign in behalf of the proposed constitutional amendment is being prosecuted pending completion of the permanent organization. Letters from persons interested in rural credits with suggestions as to methods of procedure are solicited by the committee.

The amendment will be voted on at the special state election to be held October 26.

The movement for a system of rural credits in California is in line with the general sentiment of the nation that measures should be taken to give to the farmers as favorable opportunities for financing their operations as are now open to the business men of the cities. The high rate of interest charged farmers retards rural development, besides adding an unnecessary burden to the already over-capitalized agriculture of the country, a burden which is passed along to all consumers of food products in the shape of higher prices. Therefore any plan that would remove some of the restrictions which now hamper the farmers of California should be of benefit to all the people of the state.

The defects of the present credit system emphasize further the fact that the need is not merely to provide cheaper money for agricultural

development, but to make it possible for the farmer to obtain loans in many cases where credit is not now available even on good security at any price.

To make a thorough investigation of the subject, the governor has appointed a commission of five members, consisting of Dr. Elwood Mead, professor of Rural Institutions, University of California, and for many years in active charge of rural credits and land settlement operations in Australia; Dr. David P. Barrows, dean of the Faculties of the University of California; Col. Harris Weinstock, member of the Industrial Accident Commission of California, and one of the representatives of this state on the Commission on Rural Credits and Agricultural Finance that made a study tour of Europe in 1913; State Senator William E. Brown of Los Angeles, and Mortimer Fleishhacker, a prominent financier of San Francisco. This commission will prepare recommendations to be submitted to the next legislature.

The constitution as it at present exists makes it impossible for the legislature to enact a law providing for an effective rural credits system. The purpose of Constitutional Amendment No. 17 is to untie the hands of the legislators so as to enable them to enact a law that will be constitutional as well as effective. The amendment as presented is sufficient to permit the enactment of a practical and efficient rural credits law.

FRANK H. GOULD, Chairman.
A. L. COWELL, Secretary.
Room 264 Mills Building, San Francisco, Cal.

EDUCATION AT THE EXPOSITION.

The Palace of Education at the Exposition continues to be the center of educational conferences. The Public Health exhibits, particularly those of the U. S. Public Health Service and the Health Department of Pennsylvania, have drawn crowds of interested observers.

The attendance in the section of the California Association for the Study and Prevention of Tuberculosis last month was over 15,000.

The exhibit has carried home a message to two large groups of people:

1. It has made the Californians conscious of their own high death-rate from the "white plague," because one-fourth of all the deaths in this State are from tuberculosis. Thirty per cent. of these deaths are among native born, and it has made the Californians realize their own needs for adequate care for people in the first stages of the disease. It has also made the visitors conscious of the great burden imposed upon California by the non-resident indigent patient. Hundreds of visitors have commented on it, and steps are already well on foot for the introduction of federal legislation.

The new law in this State—to raise the standard of the tuberculosis wards in county hospitals—is receiving serious consideration in a number of counties.

The open-air school movement continues to grow. Five years ago only $10,000 was spent in open-air schools. Last year $300,000 was the total in the United States. These schools are more than open-window rooms; they are not only intended for the child suffering from tuberculosis, but for the child whose attendance is irregular through sickness, and who is not strong enough to be in a regular class-room. Rest and special food is given these children.

Last year a boy who had enjoyed the opportunity of attending an open-air school in Chicago, came in one morning with another little boy, who wished to be a candidate for admittance into the school. "How sick does a feller have to be before he could get in this here school?" he asked the school doctor. This, in itself, ought to make us sit up and take notice of the large group of children who have not the physical strength to keep up in a regular school room, and who need the fresh air, sunshine and rest that the open-air school provides.

The tuberculosis death-rate is highest among laborers; nearly 75 per cent. of the deaths occur in families where the income is less than $1000 a year. This proves the necessity for adequate county hospital facilities, so that care and treatment may be given them.

Los Angeles is now running eight clinics a week, with 12 nurses soon to be put in the field. San Francisco, through its Tuberculosis Association, has asked for $40,000 for a tuberculosis division in the health department. Stockton has a splendid new dispensary, as has San Diego. Each has a nurse to look after patients. Pasadena will soon have a new dispensary. Riverside, through its committee on tuberculosis, is to have an open-air school for children who are not well enough to be in a regular class-room. In another school some intensive work in general public work will be given the children and their parents.

Meanwhile, in New York the movement for a clean bill of health has extended into a field that has long been neglected. The City Board of Health has notified the 4500 hotels and restaurants, with their 90,000 handlers of food, that all cooks and waiters must be supplied with certificates, guaranteeing their freedom from tuberculosis, typhoid fever, and other communicable diseases.

Now, stop and think. If there is any person who, by virtue of his calling ought to be free from contagious or infectious diseases, it is the person who handles food for others' consumption. The day is not far distant when health, a clear eye, good skin, good teeth and personal cleanliness will be necessary assets in any occupation. Then we may watch the declining death-rate in tuberculosis.

AUDITORS' REPORTS FOR 1914.

McLAREN, GOODE & CO.

Certified Public Accountants.

San Francisco, Cal., January 26, 1915.

Medical Society of the State of California,
San Francisco, Cal.

Gentlemen:

We have audited the accounts of the Medical Society of the State of California for the year 1914, and we annex hereto Analysis of Cash Receipts and Cash Disbursements for the year, showing totals by months.

The balance with the Union Trust Company of San Francisco at December 31, 1914, amounting to $823.26, has been verified. The volume of bank transactions for the year was as follows:

January 1, 1914, balance	$ 290.10
Deposited during 1914, as per statement of cash receipts	23,844.74
	$24,134.84
Less checks drawn during 1914, as per statement of cash disbursements	23,311.58
December 31, 1914, balance in bank	$ 823.26

The statement of the Union Trust Company of San Francisco shows a balance, as at December 31, 1914, according to their books of	$863.26	
From this must be deducted check 1465, unpaid at December 31, 1914.	40.00	
		$823.26 as above

The financial position of the society, as at December 31, 1914, was as follows:

ASSETS.

Cash:			
Union Trust Co....	$ 823.26		
On hand.....	200.00	$1,023.26	
Accounts Receivable:			
Journal advertising..		775.12	
Stock of Paper in printers' hands, as reported by the James H. Barry Co.....		275.00	
Furniture and fixtures.		750.00	
			$2,823.38

LIABILITIES.

Loan by Union Trust Co.		$1,000.00	
Medical Defence—Attorneys' fees:			
W. R. Jacobs.....$1,000.00			
W. W. Kaufman.... 2,348.40			
		3,348.40	
			4,348.40
Net deficiency.....			$1,525.02

We would point out that the deficiency is less by $356.33 than the deficiency for the year 1913, in spite of the fact that the cash disbursements on account of Medical Defence have increased from $5,213.10 to $7,093.01, and the liability incurred on this account, from $2,297.80 to $3,348.40.

We are, gentlemen,

Yours very truly,
(Signed) McLAREN, GOODE & CO.

RECEIPTS.

Summary.

Journal advertising.....	$ 6,815.33
Journal subscriptions.....	56.90
County societies.....	15,018.00
Register advertising.....	301.50
Register sales.....	89.00
Rent received.....	180.00
Sundry receipts (including loan from Union Trust Co. in December).....	1,384.01
	$23,844.74

DISBURSEMENTS.

Summary.

Journal expense.....	$ 5,182.06
Register expense.....	1,046.72
General expense.....	1,816.75
Office expense.....	883.04
Salaries	7,290.00
Medical defense.....	7,093.01
	$23,311.58

LESTER, HERRICK & HERRICK.

Certified Public Accountants.

San Francisco, Cal., May 20, 1915.

Medical Society of the State of California,
San Francisco, California.

Gentlemen:

Consequent to the request conveyed to us by Dr. Philip Mills Jones, your secretary, we have audited the accounts of your society for the year ended December 31, 1914.

The accounts which we have examined constitute a complete record of the receipts and disbursements of cash, and it has evidently not been intended to maintain records within these accounts of the assets and liabilities of the society. As to these assets and liabilities various independent records are maintained which we would designate as memoranda records only. It would be manifestly proper to maintain complete accounts of the society in all respects, but the maintenance of accounts in this manner would entail labor and expense greater than is now expended.

Our audit has confirmed the integrity of the accounting of all funds evidenced as having been received. Proper vouchers have been presented in complete support of all disbursements and the deposit in bank is verified by the depositary. As to the accounting of income embracing dues from the county societies, income from publication of the Journal, etc., we have by process of partial verification and general consideration substantially established the integrity of such accounting.

We certify that the statement of receipts and disbursements herewith as to the year ended December 31, 1914, evidencing receipts of $23,366.00, disbursements of $22,832.84 and a resultant balance on December 31, 1914, of $823.26 has been correctly prepared from the accounts as shown by the books.

We are, gentlemen,

Faithfully yours,
(Signed) LESTER, HERRICK & HERRICK.

Medical Society of the State of California, San Francisco, Cal. Statement of Receipts and Disbursements, January 1, 1914, to December 31 1914.

Balance, January 1, 1914.....$290.10

RECEIPTS.

Dues from county societies.....$15,018.00			
Cal. State Journal of Medicine.		6,875.78	
Advertising $6,815.33			
Subscriptions	56.90		
Sales	3.55		
Official Register of Physicians and Surgeons.....		390.50	
Advertising $301.50			
Sales	89.00		
Union Trust Company (Loan) December 16, 1914—60 days, 6 per cent.....		1,000.00	
Interest on bank deposits.....		66.82	
Miscellaneous		14.90	
			$23,366.00
			$23,656.10

DISBURSEMENTS.

Medical defense.....$	6,842.87	
California State Journal of Medicine	5,182.06	
Official Register of Physicians and Surgeons.....	1,046.72	
Loan Union Trust Co.—Payment of 1913 loan.....	1,000.00	
Office fixtures.....	145.00	
Salaries	7,290.00	
General expense.....	1,326.19	
		$22,832.84
Balance December 31, 1914, Union Trust Co.....$		23.26

NAVY SURGEONS.

The next examination will be held November 15, 1915, at Washington, D. C., Boston, Mass., New York, N. Y., Philadelphia, Pa., Norfolk, Va., Charleston, S. C., Great Lakes (Chicago), Ill., Mare Island, Cal., and Puget Sound, Wash.

Applicants must be citizens of the United States, and must submit satisfactory evidence of preliminary education and medical education.

The first stage of the examination is for appointment as Assistant Surgeon in the Medical Reserve Corps and embraces the following subjects: (a) Anatomy, (b) physiology, (c) materia medica, (d) general medicine, (e) general surgery, and (f) obstetrics. The successful candidate then attends a course of instruction at the Naval Medical School, during which course he receives a salary of $2,000 per annum, with allowances for

quarters, heat and light, and at the end of the course, if he successfully passes an examination in the subjects taught at the school, he is commissioned an Assistant Surgeon in the Navy.

Full information with regard to the physical and professional examinations may be obtained by addressing the Surgeon General of the Navy, Navy Department, Washington, D. C.

NEW LICENTIATES.

Clapp, Gordon Adams; Crawford, James Porter. Downing, Samuel Robert.

Epsteen, Abelson.

Fox, Harry Whitfield; Friedman, Aaron; Fuller, Justin Keyser.

Gelston, Clain Fanning; Gilbert, Ramon Augustus.

Holzberg, Henry Leopold.

Jones, Robert Alton.

Kruse, Fred Herman.

Lyman, Timothy; Lynch, William Carston.

McCarthy, Francis Justin; Maxwell, Alice Freeland.

Pape, Ernest Howard; Parsons, Carl Gehr; Perry, Joseph Raymond.

Read, Jay Marion; Rehfisch, John Morse; Robertson, Oswald Hope; Roger, Joseph Henry Denis.

Seaver, Homer Carlton; Smith, Elmer William; Smith, Harry James; Smithwick, James Milton.

Welin, Albert Fabian, Wells, Clarence Edgar; West, Howard Frank; Wetmore, Clyde Timothy; Wilson, Lafayette J.; Wood, Lorin Francis, Jr.; Wood, Walter Welcome; Woolsey, John Homer.

RACE BETTERMENT.

The second International Conference on Race Betterment, held August 4-8, was attended by a large number of men and women of scientific achievement. The Conference discussed race decadence, the possibilities of race improvement, and the agencies of race betterment.

Luther Burbank, the plant wizard, discussed "Evolution and Variation with the Fundamental Significance of Sex." Mr. Burbank said: "Abundant, well balanced nourishment and thorough culture of plants or animals will always produce good results in holding any species or variety up to its best hereditary possibilities, beyond which it cannot carry them, and lacking which, maximum development can never be realized. But a sharp line must always be drawn between the transient results, temporarily attained through favorable environment, and the permanent results of selection of the best individuals for continuing the race. Only by constant selection of the best can any race ever be improved."

Paul B. Popenoe, editor of the American Journal of Heredity, in discussing "The Natural Selection of Man" declared: "There are only two ways to improve the germinal character of the race, to better it in a fundamental and enduring manner. One is to kill off the weaklings born in each generation. That is Nature's way, the old method of natural selection which we are all agreed must be supplanted. When we abandon that, we have but one conceivable alternative, and that is to adopt some means by which fewer weaklings will be born in each generation. The only hope for permanent race betterment under social control is to substitute a selective birth-rate for Nature's death-rate. That means eugenics."

Dr. J. H. Kellogg, superintendent of the Battle Creek Sanitarium, proposed that the Conference institute a eugenics register which would undertake to register two classes of persons: "First, those who, on examination in relation to personal characteristics and family pedigree, are found to measure up to eugenic standards. Second, the children born of parents whose pedigree and physical characteristics conform to the required standards. Such a registry would be the beginning of a new and glorified human race which sometime, far down in the future, will have so mastered the forces of nature that disease and degeneracy will have been eliminated. Hospitals and prisons will be no longer needed, and the golden age will have been restored as the crowning result of human achievement and obedience to biologic law."

Among the other speakers were Dr. David Starr Jordan of the Leland Stanford University; Dr. Ernest B. Hoag of the Los Angeles Juvenile Court; Edgar L. Hewitt, director of the United States Bureau of Ethnology; Prof. Irving Fisher, of Yale University, and many others of equal prominence in sociological and scientific circles.

The Conference was concluded with a Morality Masque, in which two hundred students of the University of California took part. This masque was a dramatic arraignment of disease and war.

SOCIAL SERVICE SCHOOL.

October 1915—June 1916.

(Maintained by San Francisco Polyclinic and Post Graduate College.—1535 Jackson Street.)

Course includes:

(1) Practice work in clinics under direction, or work in organized groups.
(2) Field work with responsibility for a few families and individuals.
(3) Conferences on typical problems in case-work led by director of school and expert social workers.
(4) Lectures on types of social work and theories of social reform by recognized sociologists.
(5) Prescribed reading.
(6) Surveys and reports on special problems.

This course is arranged in response to a demand for trained medical social-workers in hospitals and clinics, for public-health nurses, social investigators, church workers, girl-welfare workers and workers with families and children.

Morning conferences, Monday and Thursday at 11 o'clock.

Family Rehabilitation.

(Social study of cases supplemented by lectures on fundamentals.)

1—How to make a Social Diagnosis (in cases of family demoralization), Miss Mary Kidder, Supt. Associated Charities.

2—Types of Demoralized Families (principles and methods of treatment), Miss Katherine Felton, Secretary Associated Charities; Dr. Philip King Brown.
  (a) Poverty—Removal of breadwinner; Unemployment; Unthrift.
  (b) Sickness—Acute; Chronic; Physically handicapped; Medical-social machinery involved.
  (c) Moral failure of parents—Desertion, Drunkenness; Failure to Provide; Degenerate Mother.
  (d) Incurable Disabilities—Prescribing an Institution (see Child Problems 3).

3—Community Resources for the Demoralized Family.
  (a) Our Benevolent Societies, Miss Mary Kidder.
  (b) Our Church Societies, Miss Mary Kidder.
  (c) Unions, Jas. W. Mullen, Editor Labor Clarion.
  (d) Widows' Pensions, Miss Margaret Nesfield, Widows' Pension Bureau.
  (e) Hospitals and Clinics, Miss Dorothy Meininger, Mt. Zion Hospital.
  (f) Legal Phases, Charles de Young Elkus.
  (g) Value of Neighborhood Work, Miss Elizabeth Ashe, Telegraph Hill Neighborhood House.

Child Problems.

1—Family Care of Children, Dr. Sanford Blum. Feeding; Hygiene of Childhood and Adolescence; Infant Mortality; Instructing Mothers.

2—Care of Children in Foster Homes, Miss Catherine Felton; O. K. Cushing.
Home-finding Societies; Test of a Good Foster Home; Foster Homes vs. Boarding Homes; Standardization.
3—Institutional Care of Children, Dr. Samuel Langer, Pacific Hebrew Orphanage.
(a) When to Prescribe an Institution; Test of a Good Institution; Dangers and Difficulties; "Institutionalism"; Study of a High Type; Study of an Inferior Type.
(b) Congregate System vs. Cottage System, Mrs. Douglas Lindley, Pres. Sacramento Orphanage; Mrs. F. M. Smith, Smith Cottages, Oakland.
(c) Standardization of Homes and Institutions, Rabbi Martin Meyer (Work of State Board Charities and Corrections).
4—Care of Delinquent Children, Dr. Millicent Cosgrave.
1—Diagnosis of Delinquency; Delinquency vs. Sex; Delinquency vs. Feeblemindedness; Delinquency vs. Mal-adjustment to School, Work, Play, etc.
2—Probation System, Mrs. E. L. Baldwin, Chairman Probation Committee.
3—Reformatories—The Honor System; Making Punishment Educative, Sidney Gamble, Preston Republic.
5—The Unusual Child, Dr. V. H. Podstata, Livermore Sanitarium. Series of 4 lectures.

Evening Lectures, Friday Evenings beginning October 15th, at 8 o'clock.

Fundamentals of Family Welfare.

(To supplement conferences on Family Rehabilitation)

1—History of the Family as a Social Institution, Dr. Jessica Peixotto, University of California.
2—Development of Standards of Living, Dr. Jessica Peixotto. Historical and Economic Aspects: Basis of Sound Family Life.
3—Family Budgets, Dr. Jessica Peixotto.
4—Social Legislation and the Standard of Living, Prof. Carleton Parker, University of California.
5—Labor Unions and the Standard of Living, National Delegate American Federation of Labor.
6—Public Health and the Standard of Living, Prof. J. N. Force, University of California.
7—Public Health and the Tuberculosis Problem, Miss E. L. M. Tate, Secretary California Tuberculosis Society.
8—Social Insurance and Occupational Diseases, Harris Weinstock, Industrial Accident Board.
9—Unemployment and Out-of-Work Insurance, Prof. Carleton Parker.

Aims and Principles of Social Service.

1—Social Work—Palliative, Preventive or Constructive?—Dr. Henry B. Favill, Chicago. Evolution of Organized Charities; Treating Symptoms vs. Diagnosing Causes; Via Social Service to Social Justice.
2—Philosophy and Health, Prof. Arthur U. Pope, University of California.
3—The Goal of Social Effort, C. S. S. Dutton, Unitarian Church.
4—The Influence of Social Service, Dr. Philip King Brown. Working Toward Prison Reform; Care of Chronic and Handicapped Cases; Prevention of Progressive Decay.
5—Religion and Social Service, Rabbi Martin Meyer.

Economic Readjustments.

(Suggested by social work.)

1—Industrial Betterment—
(a) What the Industrial Relations Commission Hopes to Accomplish and How, Harris Weinstock.
(b) The Corporation's Part, C. B. Raymond, Sec'y. Goodrich Rubber Co., Akron, O.
(c) Unionizing the Working Girl, Miss Maud Younger.
(d) The Minimum Wage Law, Mrs. Katherine Edson, State Industrial Commission.
2—Socialism—
(a) As a Philosophy, Prof. Arthur U. Pope.
(b) As an Economic Theory, Prof. Carleton Parker.
(c) As a Workable Program, Prof. Carleton Parker.

Unsolved Problems.

(From case records of social workers.)

1—The Unusual Child, Dr. V. H. Podstata, Livermore Sanitarium.
2—The Delinquent Girl—
(a) Types of Deficiency—mental and Moral; Arrested Development of Will-power, Emotional Control and Social Attitude, Dr. Olga Bridgeman, Juvenile Court.
(b) Rescues, Reformatories and Detention Homes, Dr. Louise Morrow, formerly Training School for Girls, Geneva, Ill.
(c) Intensive Case-work, Miss Jessica Beard, formerly Social Investigator N. Y. Probation and Protective Assn.
(d) Repression vs. Expression; Old vs. New Methods, Mrs. C. M. Weymann, Supt. Whittier.
3—The Unmarried Mother (to be announced). Re-education of Public Opinion.
4—The Dance-Hall Girl (Commonwealth Club Report), W. S. Woolner.
5—Mental Defectiveness, Prof. Lewis Terman, Stanford University.
6—Cheap Maternities and the Midwife, Dr. Adelaide Brown.
7—The Exposition Problem of Employment for Women, Mrs. Wm. P. Lucas; Miss T. Brookman, Y. W. C. A.
8—Mental Hygiene and After-care of the Insane, Dr. Eva C. Reid, Follow-up Worker for State.
9—Medical-Social Ethics—
(a) What is Sex Education and is it a Remedy? Dr. Julius Rosenstirn.
(b) Moral Training of the Sex Impulse, Prof. Chas. Rugh, University of California.
(c) Preventing bad breeding, Dr. Philip King Brown.
(d) Birth Control, Dr. Wm. P. Lucas, U. C. Medical School.
(e) Dangers in the Social Hygiene Movement, Father Ramm.

"A dispensary for the sick poor, a school for the instruction of physicians in general and special medical work and an organization for the promotion of social service."—Annual Report of S. F. Polyclinic.

The demands upon the lecturers in this course are such that occasional changes in the program may be unavoidable. Corrected announcements will be sent monthly to holders of course tickets.

Fee for the full course leading to a certificate—$20 payable in two installments of $10 each.

Fee for the Evening Lecture Course of 30 lectures, $10—15 lectures, $7.50.

Fee for Dr. Podstata lectures as a separate course, $2.00.

NEW MEMBERS.

Rees, Clarence E., San Diego.
Dignan, H. H., San Francisco.
W. J. Stone, San Rafael.

DEATHS.

Ware, C. D., Bodie, Cal.
Maldonaldo, Albert; address unknown. (Died in San Francisco.)
Klonk, F. W., Oakland.
Graham, Loren Benj., Pacific Grove. (Died Aegean Sea.)
Beckwith, Edmund, Petaluma.
Parkman, W. E., San Jose.
Hews, Robt. H. (died in Long Beach).

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

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ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - Butler Building,
State Journal, - - - San Francisco.
Official Register, - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XIII DECEMBER, 1915 No. 12

EDITORIAL NOTES

DECEMBER—THE END OF ANOTHER YEAR.

This is the last number of the thirteenth volume of your JOURNAL, and in spite of the supposedly unluckiness of the "13" part of it, it has been a very good year. Instead of a decrease in advertising returns, as was expected, we have actually had an increase. While there was no meeting of the State Society, and thus some forty or more papers, which usually come in for publication, did not arrive, there was an ample supply of contributions and of a quality rather above the average. Some notable articles have appeared during the past year. The meeting of the American Medical Association and of the Pan-American Medical Congress brought many distinguished physicians to San Francisco and of course to other parts of the state as well. To say that the meeting of the A. M. A. was a great success is to state what our members know quite well, for so many of them came, saw, heard and were profited. There never was a time when our members should stand more closely together; when the solidity and stability of the organization was of such great importance and necessity. Suits for alleged malpractice have greatly increased in number and no physician seems to be safe from such attacks. It is a condition hard to explain, but there seems to be a regular fever of desire to "sue the doctor"; most of the time of the Secretary and half of the income of the Society, are taken up with this work alone. To be sure, we win the suits—during 1915 we lost but one, and in that case the verdict was a sympathetic one and for but $500—but it requires an immense amount of work and time to prepare the cases and try them. A very large number never come to trial, but we have to be ready for them, just the same. This is no time for the airing of personal differences; let them go and become forgotten. And above all, guard well your tongue against idle criticism of another physician's work or treatment. Without the State Society organization behind them, with its legal department watching their interests, the physicians of this state would have been in a sorry plight during the past year; it would have cost the individual physicians who have been threatened or actually sued, anywhere from fifty to sixty thousand dollars to care for their own interests. And with these few words of summary, may the season's greetings go to each and every one; it has been a good year in many ways—let us see to it that we make the next one better—and carry through it that one thought: Guard well your tongue from criticism.

BUSINESS!!

Dues are payable January 1st. That is an important matter for you to remember, for the work of the Society is growing in magnitude so fast that business principles must be followed. Do not make any more trouble for the secretary of your county society than you can help—therefore, pay your dues promptly. All memberships terminate December 31st, but in order to give old members a chance to retain their membership, they are allowed 60 days in which to be reported to this office, and the assessment paid. That is, to March 1st. Any old member not reported and paid for before March 1st, is recorded as dropped from the first day of the year and is put back as a *new member* from the date when, and if, he is again reported. *He loses all right to medical defense during the time between January 1st and the date when he is reported, after March 1st.* Suits for damages for alleged malpractice are increasing so rapidly that no member can afford to be without the protection of the State Society for a single day. *Be sure to pay your dues early and avoid trouble.*

NEVADA STATE MEETING.

The meeting of the Nevada State Medical Society, held October 13, 14, and 15, was well attended and an excellent program was offered. We note the names of a number of California physicians on the program. Harry Alderson, on "The Cure of Syphilis"; A. B. McKee, on "Operations in the Eye Clinic of Stanford"; George Rothganger, on "The Ideal Operation for Aneurysm"; John Zeig, on "Serums and Vaccines"; H. D'Arcy Power, on "Articular Gout"; W. F. Schaller, on "Brain Tumors"; J. B. Harris (Sacramento), on "Treatment of Traumatic Epilepsy"; T. C. McCleave (Berkeley), on "The Relation of Milk to Public Health"; Leonard W. Ely, on "Joint Tuberculosis" and Martin Molony on "Prostatectomy."

DANGER AVERTED.

The wisdom of referring the names of all applicants for membership in county societies to the office of the State Society for a report before taking any action, was emphatically illustrated quite recently when the secretary of a certain county society sent in the name of one Frank B. Morrill as an applicant. The records disclose but one of this name licensed in this state. They also disclose the fact that the person of this name was an advertising specialist in "men's diseases" and "blood diseases" on Third street, near Market street, San Francisco, and that there were many nasty cases reported about him. The activities of the Board of Medical Examiners made it very uncomfortable for him and so, presumably, he decided to be good and get all whitewashed so he would look nice and clean. Wouldn't he make a nice member!

TAXING PHYSICIANS.

A prominent member of the Society writes as follows: "Can a city legally collect a business license tax from a licensed physician, in this state"? It can. There are a number of supreme court decisions on this point, one of them here in California. Furthermore, we find in Blackstone's Commentaries, Book III, Ch. 9, 158: "For it is a part of the original contract, entered into by all mankind who partake the benefits of society, to submit in all points to the municipal constitutions and local ordinances of that state, of which each individual is a member. Whatever, therefore, the laws order anyone to pay, that becomes instantly a debt, which he hath beforehand contracted to discharge." This is fundamental common law, and provided the local ordinance is not so worded as to discriminate against persons of the same class, and that it does not conflict with a superior statute, it is good and valid. Those following any special calling, as lawyers, clergymen, physicians and the like, may be compelled to pay a local tax if the community so wills it and provided all are treated alike. "Can one to whom the state has issued a license to practice anywhere in the state be further required to pay a further license to the local municipality?" This point involves in part what has been said. It obviously shows a lack of appreciation of what a license to practice medicine really is, which is almost universal. A license to practice is not a right held by the individual; it is in no sense property. It is rather a right held by the state and is in the nature of a temporary police permit to practice medicine, without molestation, provided the regulations formulated by the state are complied with. It may be withdrawn at any time, by the state, if these regulations are not complied with. One holding a license does not have to use it; he may not wish to practice as a means of livelihood, in which event the municipality, even though having an ordinance taxing practicing physicians, could not extract from him the amount of this tax. Medicine, like law, as a profession, has lost much of its original quality. The introduction of the system of charging fees, in both instances, bring them somewhat from out the domain of a pure profession and place them, at least in part, in the class with business enterprises where individuals do things for gain or profit. Formerly neither profession, or the members of it, *charged* anything for their services. Originally lawyers were officers of the crown and physicians received such emoluments or honorariums as were *voluntarily* given them. It is only recently that either could sue to collect fees from client or patient.

SOCIAL INSURANCE.

In view of the fact that the JOURNAL, from the time that industrial insurance was first broached in this state, expressed the opinion that it was merely the forerunner of general sickness insurance, the following (infra) editorial from a recent number of the Journal A. M. A., is interesting. It is a safe bet that this further sociologic change will be along within the next five years, but by that time we will have learned many things as to social insurance from our experience with industrial accident and occupational disease insurance, both of which we now have with us:

> "The appointment by the governor of California of a commission to study social insurance, and the appropriation of $20,000 for the purpose, is an evidence of the growing interest in this subject. The commission, consisting of five members, is not only directed to study social insurance systems at home and abroad, but is also empowered to recommend schemes for adoption by the state. California has just included occupational diseases within the scope of its workmen's compensation act, and the next logical step is the introduction of an insurance scheme to care for all sickness among wage earners. The more efficient medical care which a system of health insurance would provide for the workers of California is as greatly needed as it was in Great Britain. With the initiation of medical benefit under the British compulsory insurance system, many persons for the first time were able to afford the luxury of medical attention, and for the first time physicians were able to treat disease in its incipient stages among the industrial population. English physicians are expressing their surprise at the mass of suffering which previously was uncared for. The failure of many persons in this country at present to receive medical care constitutes the best argument for a change to the more effectual provision for medical attention offered by health insurance. At this time, when attention is being focused on these forms of insurance new to this country, the American Association for Labor Legislation, after three years of careful study, has prepared the draft of a health insurance bill which, it is announced, will be introduced into several legislatures next winter. This activity justifies the prophecy, previously made by the Journal, that the enactment of workmen's compensation laws would lead to new measures for both health and accident insurance."

HAY-FEVER IN CALIFORNIA?

Dr. W. Scheppegrell, the President of the American Hay-Fever Prevention Association, Audubon Building, New Orleans, is very anxious to know some facts as to the existence and the amount of hay-fever in California, and whether it appears to be increasing or decreasing, and if so, in what localities. The hay-fever sufferer is a very pitiable object and about the only thing that he can do is to go to some place where hay-fever does not exist —if he has the means. Will our members who happen to have any definite knowledge of the existence or absence of hay-fever, and of the presence or absence of the rag-weeds that produce it, please advise Dr. Scheppergrell? The information may be of advantage to those eastern sufferers and, incidentally, to California by coaxing them to come here for relief. He will be very grateful for any information which may be sent to him.

PUBLIC HEALTH; MEDICAL JURISPRUDENCE.

Two books of rather unusual interest, especially at this time when changes are so rapid and suits so very frequent, have recently appeared. "Medical Jurisprudence," by Elmer D. Brothers, of the Chicago Bar, published by the C. V. Mosby Co., St. Louis, is an interestingly written treatise on forensic medicine which it be well worth while for any physician to read. Doctors as a class are lamentably ignorant of their personal and professional rights and wrongs, duties and obligations. Indeed, so many queries of this sort are coming to the office, that from month to month we shall publish items on various points that have been raised. The other book is "Legal Principles of Public Health Administration," by Henry Bixby Hemenway, published by T. H. Flood & Co., Chicago. It is difficult to see how any public health officer could get along without such a book; and certainly to have read it and to have it at hand, would save any such official much perplexity and probably some worry. Speaking of specially trained health officials, the author says something quite apropos of the Sacramento incident:

> "For this special training there may be little demand outside of the governmental work. As an incentive to acquire special fitness the officer should be led to expect permanency of tenure with pay commensurate with the character of the duties. In commercial business it is found to be economical to pay sufficiently large salaries to the higher employees to make it an object to them to study constantly how their particular branches of the work may be improved, either as to quality of the work performed or as to amount of output. Such employees are retained so long as they can 'make good,' to use the business expression, and the pay is made sufficiently high so that they will not be looking for other positions. The state must compete with commercial establishments for men. Certainly the business of the entire commonwealth is as important as that of any portion as represented by a single commercial establishment."

In other words, if modern business finds that it pays to have well-paid experts, why should it not follow that the principle applies to a city; and especially to its health?

PHOTOGRAPHS, PLEASE!

On several previous occasions we have referred briefly to the records concerning physicians which are being gathered in the office of the State Society. The desire is to secure and file away all the information it is possible to get about any and every physician in California. It is exceedingly valuable, the commendatory information no less than that which reflects unfavorably. The question of identity has come up on a number of occasions and in one instance several weeks were required before we could obtain a certain sample of a physician's writing in order to identify a signature to an official document. You have no idea of the importance of this apparently trivial thing of absolutely fixing the identity of a certain individual. For that reason we are filing, as fast as the work can be done and the material secured, samples of handwriting, photographs, etc. Will you please send us your photograph? Preferably, an unmounted one, with your signature on the back; but any sort of photograph will do. We have a few hundred photographs and they come in very handy; we want all we can get; will you help? Please do.

RAY LYMAN WILBUR, M. D., COUNTRY DOCTOR, PRESIDENT OF STANFORD.

The back-bone of the medical profession is not the city specialist or the wonderfully able surgeon; as the JOURNAL has always contended, it is the country doctor who is thorough, careful and conscientious; who works hard and studies hard and who has a large conception of humanity and of human nature and frailty. It is therefore a very great pleasure to record the appointment of Dr. Ray Lyman Wilbur to the presidency of one of the large universities of this country—Leland Stanford, Jr., University. The opportunity has been given him to extend his work and his activities into a very large field and the knowledge and the training which he acquired as a good "country doctor" will enable him to be very useful to the institution whose future destinies and policies he is to largely guide and shape. It would probably be conventional to compliment Dr. Wilbur upon his appointment; but would it not be more fitting to felicitate Stanford University and to compliment the medical profession and particularly the country doctor upon this recognition of what it, and the type, may stand for in the community?

ORIGINAL ARTICLES

AMPUTATIONS AND THEIR AFTER-TREATMENT.*

By L. ELOESSER, M. D., San Francisco.

(From the Surgical Service of Stanford University Medical Dept. at the San Francisco Hospital.)

The subject of amputations is one that up to recent years has long been neglected and overshadowed by more important modern achievements in abdominal, thoracic and cranial surgery. We can glean more useful information from older surgical writers—Velpeau and other old French and English surgeons—than from the more modern text-books. Of course these writers of a day when amputations made up more than half of all major surgical procedures, had a vastly greater experience than we whose knowledge of the treatment of wounds and chronic inflammations of the bones and joints has enabled us to save many limbs that were formerly sacrificed. Our results in amputations, however, lag far behind those in other surgical procedures. F. T. Murphy of Boston made an interesting and careful study of 166 cases of amputation from the Massachusetts General Hospital. He found unsatisfactory results in one-third of them. Crainer found that in 92 diaphyseal amputations but two could be considered as having given ideal results, and that 70 were poor; so that the methods of procedure described in standard text-books must be in urgent need of revision.

If we ask ourselves what are the ideal results to be obtained after amputation, we must distinguish between immediate results and final ones, and it is on the final ones that the future usefulness and comfort of the patient depend.

As to immediate results, we should attain safety of operation, flawless healing of the wound, and a painless post-operative course. Safety of operation—this we have been able to reach. The dangers consist in shock and hemorrhage. We have been able to obviate shock by nerve-blocking methods—spinal and regional anesthesia for the lower extremities and regional anesthesia, especially blocking of the brachial plexus, for the upper. These methods are so well known that I need no longer dwell on them, except, perhaps, to call attention to the usefulness of blocking the brachial plexus above the clavicle with novocain as first described by Kulenkampff. This is a perfectly safe and certain method of securing a complete anesthesia of the arm from somewhat below the shoulder down. It is described in Percy Shields' translation of Braun's book on local anesthesia.

Operative hemorrhage we have been able to combat by the Esmarch constrictor. The use of a constricting bandage, however, carries with it as disagreeable sequels a vaso-motor paralysis and a subsequent tendency to post-operative bleeding from the smaller vessels which have not been tied in the course of operation. It also causes a venous engorgement below the constrictor unless we first express the blood from the distal part of the limb by wrapping it with an elastic bandage. Where one can, therefore, it is better to do without the constrictor. This is perfectly feasible in operations on the arm and the leg if one elevates the limb, holds it elevated five or ten minutes previous to operation, and keeps it so during operation until the main vessels have been clamped. An assistant should hold the foot or the hand well elevated, placing the foot on his shoulder. There is surprisingly little bleeding from the arteries with the limb in this position, and scarcely any back bleeding from the amputated part as the blood has all run from the veins by force of gravity. It is a little awkward, it is true, to make the incisions and to saw off the bone in a vertically elevated member, but this inconvenience is more than made up for by the saving in blood and freedom from hemorrhage after loosening the bandage.

It might seem unnecessary to discuss wound infection here. But if we refer to Murphy's paper again we find that but very few of the amputations cited by him healed by primary intention, and I am sure that all of us have had the same unfortunate experience of seeing amputation stumps break down where they should have healed perfectly. What often happens is this: at the first dressing the end of the stump is a little swollen,—there has been a little post-operative oozing. The skin incision, however, looks perfect. It stays so for four or five days. Then the evident presence of blood clots begins to bother us. We take out a few sutures and endeavor to squeeze out the coagula. We open the wound a little; perhaps introduce a hemostat. A sinus forms; and heals in three or four weeks perhaps, if we are lucky, with a more or less dense scar that is attached to the bone. Or perhaps the infection has been carried to the bone itself and the whole wound breaks open or the sinus persists. Sequestra of the bone are shed until we or our successor are forced to reamputate. This is the history that many of the patients bring with them to the San Francisco Hospital.

The slightest infection in these amputation wounds makes all the difference between a comfortable and useful stump and an annoying and useless one. An infected scar is attached to the bone and it makes the course of after treatment by which we endeavor to secure an end-bearing stump impossible. So that we must work under the most rigorous asepsis, shut off skin contact by means of towels attached to the edges of the incision and use all possible means to prevent a collection of blood in the wound after operation. Wherever there is the least possibility of post-operative oozing (and this is the case in practically all amputations) it is far better to drain—not in order to carry off infectious material, but to give the blood a chance to leak out. A thin drain of rubber-tissue carried through from one end of the wound to the other and removed in 24 hours, as soon as oozing has stopped, will not delay healing at all, but will obviate the necessity of opening many a wound and will relieve us of much anxiety.

In septic conditions, which form a considerable part of indications for amputation, we cannot accomplish primary closure of the wound even if we

* Read before the San Joaquin County Medical Society, February 26, 1915.

are able to disinfect the skin; the incision traverses so many infected lymph-spaces that to seal the soft parts tightly by approximating sutures is to invite disaster. In several septic cases I inserted numerous rubber drains down to the bone and brought the soft parts but loosely together with a few interrupted sutures. I lost the cases from sepsis and afterward wished that I had left the wounds entirely open. Our working conditions in septic amputations are in no wise different to-day than they were in the preantiseptic era. It was a great achievement of Roser's when he advocated leaving all amputation wounds wide open without suture and without a dressing, with merely a pus-basin beneath the limb to catch the secretions as they might fall. He saved many patients by this simple method, who in the hands of others would have fallen a prey to hospital gangrene and the other terrible infections of those days. For all our bi-chloride solutions and outer show of asepsis, the inside of a septic limb is no different to-day than it was sixty years ago.

Helferich recommended a good and simple method of treating septic cases. He simply sawed the limb straight off immediately above the septic area, like a butcher cutting off a leg of meat, without regard to flaps or coverings for the bone. Then after the patient had gotten over his sepsis and the wound was clean and granulating, he did a reamputation by a proper method. This procedure has much to recommend it. It is economical; we are able to approach nearer to the septic area with a simple open incision than we would with a flap operation. If a flap becomes infected, as it often does, we often have to reamputate anyway, and add to the waste of bone at the first operation the additional sacrifice of reamputation. And besides all this, of course, cutting the offending part straight off is far the quickest and simplest way of dealing with sick men whose margin of safety is low,—with septic patients who can ill afford the risk of a complicated surgical procedure.

Patients usually suffer considerable pain the first few days after operation from inflammation of the large wound area and irritation of the many raw nerve endings; especially do they complain on the night following operation of twitching or jumping of the amputated member. There is a spasm of the muscles which, if allowed to continue, may lead to contractures difficult to overcome. The parts can scarcely be set at rest by a splint; the stump is short, the pressure of a tightly fitting splint almost unbearable, and the area over which the splint acts often so small that it is almost impossible to apply sufficient pressure to prevent contracture. Traction with adhesive plaster overcomes all these obstacles;—it relaxes the muscles, prevents spasm, sets the parts at rest and keeps them so. Besides all this, besides relieving post-operative pain, traction has the great advantage of taking the tension from a possibly scanty flap. The adhesive traction should extend high enough above the site of amputation to exert its influence on all muscles inserting on the amputated bone;—thus, in an amputation above the ankle traction should be applied up to the hip in order to relax the flexors inserting into the tibia at the knee. The dressing over the end of the stump should be sparing, and adhesive traction applied quite close to the end of the stump. Infection through the small dressing should be avoided by the use of antiseptics, camphorphenol, for instance. If the bandages become soaked by post-operative oozing the dressing may be reinforced by gauze or cotton applied over the traction apparatus.

So this is what we must consider first,—freedom from shock and hemorrhage, safe healing of the wound, and freedom from post-operative pain.

The problems as to the usefulness and comfort of the healed stump are more intricate. What have we to demand of a stump? It must be painless, soundly healed and fit to wear an artificial limb without discomfort.

Pain in the stump comes from two sources—from the nerve-trunks and from the bone. Almost all amputated persons suffer from some pain in their limbs at first, a shooting neuralgic pain which is referred to the amputated part. In some this pain continues, often so severe as to be intolerable, causing the so-called stump neuralgia. If it last long enough it makes their lives an agony and is comparable only to facial neuralgia. The pain was formerly thought to come from a neuroma of the nerve-stump. All amputated nerves, however, show some neuroma formation, all of them show a tendency to regenerate, and if we examine the end of a severed nerve under a microscope we always see an intricate maze of off-shoots from the nerve-fibrils—attempts at regeneration—amputation-neuromas. All nerve-stumps show more or less of a neuroma, but not all neuromas are painful. Witzel has shown that their painfulness depends upon attachment to surrounding structures, especially the bone. If a neuroma slips up and down in its sheath easily, as a normal nerve does, it is usually not painful. If it is entangled in a scar or grown fast to the bone, every movement of the limb irritates it and it is a constant source of distress. It is particularly after infected amputations that we meet excrusiatingly tender nerve stumps. The lymph spaces are particularly well developed along the nerve-sheath, and infection travels a long way along the nerve, causing a neuritis and a formation of scar-tissue with perineural adhesions. Witzel recommended pulling the nerves out of the wound for a distance of an inch or two, which can be done easily if they are properly isolated, and cutting them off, so that when they retract, their stumps will lie considerably above the level of amputation and will not adhere to the other soft parts. This is a much simpler procedure than the complicated methods of nerve anastomosis recommended by others to avoid neuroma formation, and seems to be equally efficient.

Once the painful neuroma is there, we can excise it. This, however, like the peripheral operations in facial neuralgia does not offer a guaranty against recurrence. I have twice injected the nerve above the neuroma with alcohol. This can be done subcutaneously; the peroneal nerve, for instance, may be injected where it can be felt at the

head of the fibula, or the ulnar nerve at the elbow. Or if the nerve is inaccessible it may be exposed through a small incision before injecting it. This procedure is entirely satisfactory. Tenderness in the neuroma disappears immediately after the injection, and the effect is lasting.

The second source of pain in stumps, the most frequent one perhaps, is in the bone itself. It is not the bone that is painful, but the periosteum, and it is interesting to see how many methods have been advised of sealing the end of the bone so as to make it painless. We have run the gamut through the classical amputations of Langenbeck with a periosteal cuff, through the osteoplastic procedure of Bier, who seals the end of the stump with a pedicled flap of bone, to the newer aperiosteal amputation of Bunge, recently brought forward in America by H. H. M. Lyle.† It is the periosteum that is painful. Even normal periosteum is tender to continuous pressure, as anyone may prove for himself by kneeling on his shin-bones for five or ten minutes. Now the periosteum separated in the form of a cuff and laid about the end of a bone, as the classical descriptions advise, does not usually give a smooth, well-rounded stump, but rather a lot of jagged and irregular osteoplastic projections, especially in the femur. Here the periosteum is so adherent that we cannot separate it in a regular cuff; the best we can do is to cover the stump with a lot of periosteal shreds and tabs. It is to secure a smooth covering for the ends of the bone that Bier advised his osteoplastic flap. This procedure is complicated and difficult and entails the sacrifice of a cylinder of bone equal in length to its diameter. If successful it may give us a smooth, rounded stump. If not, if infection and necrosis occur, we have sacrificed a lot of bone and are worse off than we should be without the flap.

How, then, can we secure a smooth, rounded end to the bone, one painless and without projecting spicules? Well, if the periosteum causes spicules and pain, take away the periosteum! This is the very simple idea of Bunge, and it is a most practical one. Simply remove the periosteum for about a quarter of an inch above the level of where the bone is to be sawn, and saw the bone through. This leaves the end of the bone bare. The tender, nerve-carrying periosteum is gone, and with it is gone that membrane whence the jagged projections of the stump originate.

The marrow is another part of the bone which has power of callus-production and is thought by some to be sensitive to pressure. In order to be sure of not getting a bone-production from this source, Bunge advised scooping it out with a curette for a short distance above the end of the stump. Many experiences and experiments have shown that former fears that bone might become necrotic if denuded of its periosteum are groundless. In fact, this method seems to be valuable even in infected cases where there is some subsequent exfoliation of necrotic bone, cases which by former methods of amputation were particularly prone to be followed by a proliferative periostitis and an irregular and extremely tender stump.

Another way of securing a painless end-bearing stump is to utilize surfaces naturally adapted to weight-bearing or others naturally free of periosteal investure. This, of course, is only possible in certain locations. At the ankle we can secure good end-bearing stumps by utilizing the natural weight-bearing surface of the os calcis in a Pirogoff amputation. At the knee we can, instead of doing a supracondylar amputation exarticulate. The dread of exarticulation at the knee is a legend of pre-antiseptic days. We need no longer fear to open the knee-joint nor fear the interminable suppuration caused by exfoliating infected cartilage if we observe proper asepsis. The cartilage of the femoral condyles is free of nerves and gives us an excellent end-bearing surface, which should be used in all aseptic cases where we have skin enough to form a proper flap.

Epiphyseal amputations also give good painless stumps. The ends of the bone do not seem to share the tendency of the shafts to form a mass of osteophytes around the end of the stump. Why this is I do not know. It cannot be that the epiphyses lack bone-forming power, since epiphyseal fractures are notoriously prone to throw out large callus masses, and non-union in most epiphyseal fractures is almost unknown. The explanation may lie in the fact that the ends of the bone are not surrounded by large bodies of muscle, and that there is none of this nutrient muscular substratum for jagged bits of bone to grow into, no substratum for the formation of an ossifying myositis; for the osteophytes we see jutting out from the end of an amputated femur into the thigh muscles are nothing more nor less than an ossifying myositis of the end of the stump. Therefore, in amputations through the shaft, scrape off the periosteum, as recommended by Bunge, but where possible amputate through the epiphysis or exarticulate.

As to the soft parts: Muscular covering for the stump, no matter how we sew the muscles together at operation, is notoriously impossible to attain. The muscles wither and atrophy through lack of use. If, however, we can cover the end of the stump with tendons according to Wilms, sewing the opponent groups together, we shall have achieved two ends. In the first place we shall, in a great measure, have combated muscular atrophy by giving the muscles remaining in the stump work to do, one group of muscles pulling against the opposing group. In the second place we shall have provided for the end of the bone a hard, durable covering of tendons, which, slipping in newly-formed sheaths, make a bursa over the stump well calculated to resist pressure.

I have not plead for any particular form of flap. It is well to fit the incision to the individual case, to take skin and soft parts where they can be gotten, whether in front, in back or at the sides—anywhere so as to save material, merely taking care to plan the incision so that the scar will not fall over the end of the bone. Where the scar of the soft parts coincides with the bony one it tends to adhere and to ulcerate; it is easily pulled open by

† J. A. M. A., Vol. LXIII, p. 1149, Oct. 3, 1914.

the rubbing of an artificial limb and often makes end-bearing impossible.

The third post-operative requirement is that the stump be adapted to the wearing of an artificial limb. It is a pity that most surgeons know so little about the art and handicraft of the instrument-maker. Our lack of knowledge places us at his mercy. We can learn a great deal from him, and he can learn something from us. Traditions as to amputations have gone down among instrument-makers from generation to generation. Most of them do not recognize end-bearing stumps, and it is only by dint of the most obstinate insistence that we can overcome their hereditary ideas and get them to fit truly end-bearing sockets. Hitherto the fewest stumps were really end-bearing; it takes time to overcome what a workman has been generations in learning.

Appliance-makers view amputations at the middle and lower third of the leg with horror, because of their painfulness and tendency to ulcerate, they say. A. A. Marks & Co. of New York have issued a book that gives a good idea of the instrument-maker's views on this point. They, like the older surgeons, claim the so-called site of election—i. e., hand's-breadth below the knee—as the favorable place to amputate, and find all longer stumps of the leg painful, liable to ulcerate, non-end-bearing and difficult to fit with an artificial leg. Their views of course have been gleaned from experience with thousands of stumps, and the fault lies not with them, but with the surgeons who have sent them these unsatisfactory amputations in the lower half of the leg. I cannot agree with the appliance-makers as to the site of election; the site of election is as low down in the limb as is consistent with proper healing; other things being equal, the longer the stump the more power it will have in propelling the artificial leg. Provided we can make a painless stump, the longer it is the better.

Fig. I. Showing looseness of the soft parts over the end of the stump.

Fig. II. Patient bearing his full weight on the end of stump.

The patient I have brought with me will show you, I think, that good results are attainable, even in low amputations. On December 1, 1911, his leg was amputated at the middle. Two weeks afterward he was walking about on a peg-leg, bearing weight on the end of his tibia. He has had no trouble whatever with his leg; the end of his stump is not tender to pounding or thumping, and is covered by a tough, callous skin which is freely movable over the end of the bone, and is separated from it, I think, by a bursa.

Another experience is amusing and instructive. On March 18, 1915, a man who had come to the San Francisco Hospital for reamputation of an ulcerated and tender stump, came back for a certificate. Reamputation had been performed December 5, 1914; by December 20 he was walking on a peg-leg with a good end-bearing extremity. A few days later he was discharged from hospital and lost sight of. He went to a maker of artificial

limbs and bought a leg without consulting anyone. He was furnished with a non-end-bearing cylindrical socket which bore the weight of the leg at the usual place—the tibial condyles. The man was not satisfied, so he got end-bearing on his own account by running a buckskin lashing back and forth through holes in the leg, so as to make a sort of net; on top of this he stuffed the socket with felt for his stump to rest upon, and in this way improvised for himself an end-bearing socket. The stump was entirely satisfactory.

Another point where surgeon and appliance-maker are at variance is in the question of how soon to apply an artificial limb. One cannot insist too strongly on the importance of bearing the future function of the stump in mind and working from the very beginning with this end in view. The limb should be applied early. A proper stump should be ready to receive a limb in from two to three weeks. The patient before you was up and walking two weeks after his amputation—that is to say, as soon as his wound was healed.

We owe the plan of after-treatment that makes this possible to Hirsch. Hirsch outlined a detailed plan of massage and exercises to fit the stump for its future weight-bearing function. The plan of treatment we have adopted at the San Francisco Hospital is as follows: In order to ease the pain of the first days after operation, to avoid the spasmodic contractions of the muscles and to relieve any tension on the flaps, we put on a Buck's traction reaching up the limb as far above the site of amputation as do any muscles that insert into the amputated bone. Thus, in an amputation at the ankle we apply adhesive plaster up to the hip, in order to relax the ham-string muscles inserting into the tibia. We elevate the limb and apply a weight of six-eight pounds. Three or four days after operation, as soon as the drains are removed, we begin to rub the end of the stump gently, increasing the force of friction daily. At the end of a week we begin to remove the sutures and dress the wound merely with a fine strip of gauze. Several times a day the weight is removed from the traction apparatus, the stump is massaged, and the patient instructed to press the end of it against the mattress. By ten or twelve days the wound is generally soundly healed and the stump will stand massage applied with considerable force. It is pounded and kneaded several times daily. Then a temporary plaster of paris peg is made for the patient, and at the end of two weeks he begins to stump about, at first with crutches and in a few days without them.

To outline, then, the plan of operation and after-treatment: I should say, amputate as low as you can, even if you have to form your flaps in an irregular manner. It does not matter much how they are formed, provided the scar does not fall over the end of the bone. If you can, do an epiphyseal amputation, or an exarticulation, or preserve part of the sole of the foot. If you must amputate through the shaft, remove the periosteum and the marrow from the end of the bone. Avoid the use of the constricting bandage if possible, and control the bleeding by operating on the elevated limb. Pull the nerves out of the wound and cut them off high; bring the tendons over the end of the bone, sewing the opposing groups together; check all bleeding as carefully as you can and provide for future oozing by a small rubber tissue drain running from one angle of the wound to the other. Approximate the soft parts carefully. Dress the end of the stump with an antiseptic dressing—a strip of gauze moistened in camphorphenol and laid over the wound, and dry sterile gauze over this. Over this dressing put on a Buck's traction with adhesive plaster reaching high above the site of amputation and apply a weight of six or ten pounds. Remove the drain as soon as oozing has stopped, usually in one or two days. In three or four days begin with gentle massage. As soon as the sutures are removed increase the massage, knead the wound with increasing force and have the patient actively exercise the end of his stump. Get the patient up and walking in an artificial appliance at the end of the second or third week.

CONCLUSIONS.

(1). To secure good immediate results:

(a) All amputation wounds should be drained to avoid collection of blood clots.

(b) The most rigid asepsis should be exercised.

(c) Freedom from post-operative pain (muscular spasm) and relief of tension should be secured by adhesive plaster traction.

(d) In septic amputations it is often wise to cut straight through close to the infected area and to take care of the stump secondarily by a proper reamputation.

(2). Good final results entail a painless end-bearing stump suited to the application of prosthetic appliances.

(a) Pain in the stump is due (1) to neuromata, (2) to periosteal irritation, (3) to a weight-bearing scar.

(b) Neuromata can be made harmless by a high section of the nerve.

(c) With painful neuromata the nerve should be permanently blocked above the neuroma by an alcohol injection.

(d) Pain from periosteal proliferation and irritation can be avoided by: (1) epiphyseal amputations, (2) osteoplastic procedures (Pirogoff, etc.), (3) exarticulations, (4) aperiosteal amputations (Bunge).

(e) The scar should not fall over the end of the bone.

(f) Atrophy of the muscles of the stump should be avoided by suture of the opposing tendon-groups.

(g) End-bearing should be secured by early massage, by early use of the stump, and by early application of the artificial limb (Hirsch).

CLINICAL RECORDS.*
II. BLANK FORMS.

By EUGENE S. KILGORE, M. D., San Francisco.

The most common fault which we have found with various hospital forms for clinical use is over-complexity. It usually happens that the one who is planning a system of history sheets, in his zeal for thoroughness, feels a strong desire to set aside definite spaces for a large number of important facts which should appear in the history, physicial examination and laboratory notes; the impression being that printed headings will prevent things being forgotten and will make for completeness. It is our experience that printed headings and spaces for recording clinical facts are useful if they are limited in number and well chosen; but that it is very easy to get too many of them. Nurses and clinical clerks will not do thorough work merely because a certain number of blank spaces are before them to fill in; and unless other adequate forces are operating to promote enthusiastic and painstaking work, an elaborate system of headings and spaces, if it is heeded at all, inevitably leads to perfunctoriness. Moreover where there exists the intelligence and industry requisite for good clinical work and good records, printed forms and spaces if too extensive stand in the way. Elasticity is essential, and a good account of an illness or of abnormal physical findings as a rule cannot be "filled in" on a printed form. The principle is the same for clinical records in private practice, and we do not see how physicians who wish to keep careful records of their cases can get along with the case history forms which they are usually asked to buy—papers on which there is so much printing as to leave scarcely any room for writing.

In the University Hospital a compromise has been adopted between the type of record without headings and that with many headings. Plain ruled paper with binding margin and a narrow column for dates is used for the history and physical examinations and later notes, as well as for many of the laboratory reports, while printed forms are used for the title page, the graphic sheet, the treatment record, and the more routine laboratory procedures. There are good reasons, we believe, for printing a considerable number of items on the title page and the graphic chart.

I. *The title page* is shown in Figure 1. Most of the items are obvious, and only the following need be mentioned:

(a) *"Alternative spellings of name."* It has often happened that when a woman re-enters the hospital after changing her name by marriage the two records of her case are never connected. Also among certain classes it is not uncommon for a family name to be spelled in two or three different ways. It is important that such variations be made clear on the record so that cross reference filing cards will be properly filled out in the record room.

(b) *Address.* For the success of the follow-up system it is essential that the admitting clerk secure as carefully as possible addresses where it will probably be possible to reach the patient sometime hence. Addresses of friends should if possible be different from the patient's, and a business address of an employer is an advantage as well as the address of the patient's physician. These addresses are to be used later when letters to former patients are returned. Employers' addresses may also be useful in occupational investigations.

(c) *Race.* In order to make possible in future much more thorough researches in regard to race and disease, this item is amplified and a serious attempt is made to record accurately all the obtainable facts. Patients who cannot give the racial extraction of their parents are urged if possible to obtain the information from their families and to communicate it later for inclusion in the hospital records. Here it may be said that these items on the title page are not to be entrusted to nurses or interns to record. One person, who occupies a permanent clerical position in the hospital, should be responsible for the filling out of this title page for every case. When patients are admitted during the absence of this clerk from the office they are to be visited later and the admission data confirmed. Without such centralization of responsibility it is hopeless to get even names and addresses uniformly correct and legible. In order to inquire intelligently in regard to race the admitting clerk should refer frequently to a standard text on the subject.

For the same reason it would be an advantage to have a description of occupation and social data recorded by one person. This person would, of course, require special training, and until the hospital organization permits the employment of a social worker who can take this responsibility completely, these items have been included in the intern's history outline. (See previous article.[1])

(d) Considerable space is set aside for diagnoses, for the reason that many subsidiary diagnoses are recorded. (See article on Diagnosis Nomenclature by Dr. J. L. Whitney.[2]) The diagnoses are to be signed.

(e) The follow-up system for securing end results, to be most efficient, requires active co-operation between the clinical staff and those in the record room. Before patients leave the hospital they are to be made to understand our efforts to see them later, and the special advantage this will be to them as well as the advancement of medical science. Often the resident can make a definite appointment for the patient to see him at some time in the future; and this date and the doctor's name being written in the spaces indicated on the title page, the record clerks at the proper time will send a letter reminding the patient of his appointment with Dr. Blank. Follow up letters containing this personal element secure much better results. If the patient is not to return until after the staff has changed, it is advisable to write down for the benefit of the one who later sees the case the items particularly desirable for him to take note of.

One year is the usual time between the patient's

* Second article describing the clinical record system in the University of California Hospital. An article by Dr. J. L. Whitney and one by the writer on related subjects appeared in the Boston Medical and Surgical Journal of November 18, 1915. Reprints of the series when completed, together with record forms, etc., will be sent on request.

UNIVERSITY OF CALIFORNIA HOSPITAL

Doe, John Judson — 27 — S — C — Med. — 9284
Name — Age — S.M.W.Sep.Div. — Ward — Service — Hospital Number

Judson-Doe — 3/4 English & Dutch — Oct. 28, 1915
Maiden name or alternative spellings of name — Race of Father (fractional constituents if possible) — Date of admission

London England — 4/4 English
Birthplace — Race of Mother (fractional constituents if possible) — Date of discharge or transfer

682 California St, San Francisco.
Permanent address

Geo. C. Molton (uncle) — 28-8th Ave, San Francisco.
Relative (what relation?) or friend most likely to have permanent address — Address (Different from patient's if possible)

H. A. Harris & Co. — 428 Mission St., S. F.
Relative or friend (Employer if possible) — Address

2834 — Dr. A. C. Smith
O. P. D. Number — By whom referred — Address

Admission diagnosis

Main Diagnosis and Complications. (For each diagnosis give condition when discharged, i.e. well, relieved, not relieved, not treated or dead.)

Rheumatic myocarditis — not relieved.
Broken compensation — well
Premature contractions

Coincident Diagnoses and Complications.

Varicose veins — not treated
with indolent ulcer of leg — relieved
Inguinal hernia — not treated

(For pre-operative and pre-autopsy diagnoses see special sheets. These diagnoses are final.) — Signed

Oct. 28 1916. Dr. resident — General condition
Date to report — Whom to see — Items particularly desirable to include in subsequent reports

Surg. 1965 Med. 2817.
Former Admissions: (Services and numbers)

Subsequent Admissions. (Services and numbers) — Transfer

BLOOD

Date	% Hb. (Instrument =)	R. B. C.	W. B. C.	Differential: Neutrophiles	Eosinophiles	Basophiles	Lymphocytes	Large Mono. and Transit.	Myelocytes	No. Cells counted	Parasites	REMARKS (Record if reds are abnormal, if platelets seem increased or diminished, etc.)
Oct. 28	75	4,560,000	7000	62	2	0	30	6		200	0	Slight achromia.

URINE

Date of voiding single spec. or of beginning to collect 24 hr. sp.	Amt. (c.c.)	Sp. Gr. 1000 and	Reaction	Albumin % *	Sugar % †	Microscopical:		Casts	Cells	
Oct. 29 ss		20	ac.	S.T.	0			few hyal.	few leucs.	

*Qual. meth. = Nitric acid. Quant. = †Qual. meth. = Fehling's Quant. =

Fig. 1. The title page.

discharge and the first attempt to get a report. But in many cases it is desirable to see them earlier; for example, a benzol treated case of leukemia should return for frequent blood examinations; a syphilitic should return in a short time for another Wassermann test; a patient who has had an abdominal exploration which did not satisfactorily explain his pain should be followed more closely than once a year.

Naturally there is a limit to the number of cases

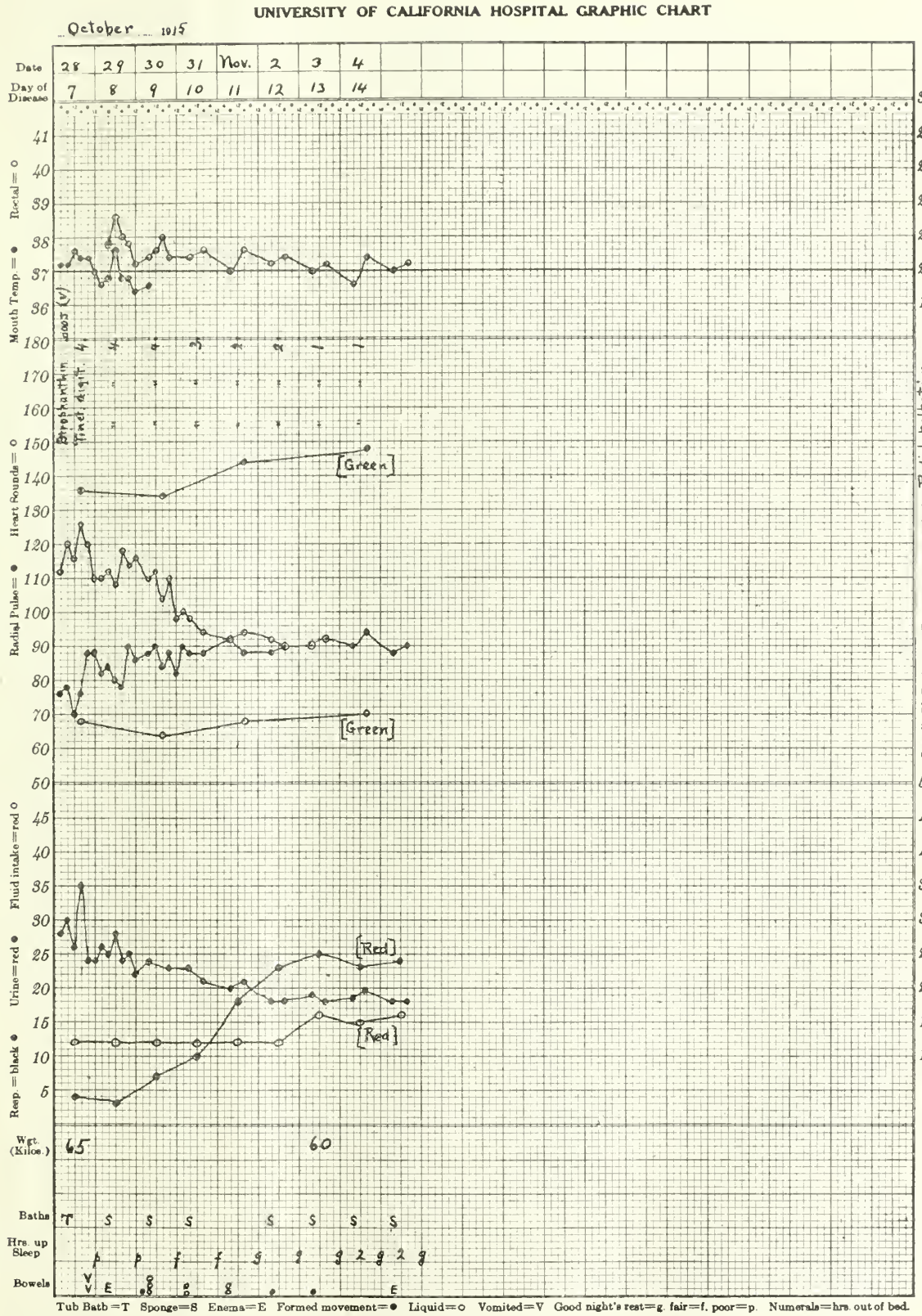
UNIVERSITY OF CALIFORNIA HOSPITAL GRAPHIC CHART
October 1915
Date 28 29 30 31 Nov. 2 3 4
Day of Disease 7 8 9 10 11 12 13 14
Rectal = o
Mouth Temp. = ●
Urine (c.c.)
Bronchanthin
Heart Sounds = o
Radial Pulse = ●
[Green]
[Green]
Fluid intake = red o
Urine = red ●
Resp. = black ●
[Red]
[Red]
Wgt. (Kilos.) 65 60
Baths T S S S S S S S
Hrs. up Sleep p p f f g g g 2 g 2 g
Bowels V V E g g g E
Systolic Bl. Pr. in mm. Hg. = green ●
Diastolic " " " " = " o
Method = Radial palpation
" = Change of sound
Tub Bath = T Sponge = S Enema = E Formed movement = ● Liquid = o Vomited = V Good night's rest = g. fair = f. poor = p. Numerals = hrs. out of bed.

Fig. 2. The graphic chart.

UNIVERSITY OF CALIFORNIA HOSPITAL

Name *Ward* *Bed* *Hospital Number*

BLOOD

Date	Hb. (Instrument =)	R.B.C.	W.B.C.	Differential: Neutrophiles	Eosinophiles	Basophiles	Lymphocytes	Large Mono. and Transit.	Myelocytes	No. counted	Parasites	Remarks (Record if reds are abnormal, if platelets seem increased or diminished, etc.)

URINE

Date of voiding single spec. or of *beginning* to collect 24 hour spec.	Amt. (c.c.)	Sp. Gr. 1000 and	Reaction	Albumin % *	Sugar % †			Microscopical: Casts	Cells

* Qual. meth. ..... Quant. = ... † Qual. meth. = ... Quant. =

SPUTUM

Date	Character	Tubercle Bacilli	Other Organisms	Cells, Elastic Fibers, Crystals, etc.

FECES

Date	Character	Blood: Benz.	Blood: Guai.	Fat	Parasites or Ova	Bacteria	Other

UNIVERSITY OF CALIFORNIA HOSPITAL

TREATMENT RECORD

Name *Ward* *Bed* *Hospital Number*

Date	Order	P.R.N.	Nurses' Remarks

UNIVERSITY OF CALIFORNIA HOSPITAL

DIET RECORD

Name *Ward* *Bed* *Hospital number*

Date	Hour	Article	*Grams Total	Grams: Proteid	Carbohyd.	Fats	Salts	Fluids	Calories

* Figures obtained by weighing of food actually eaten are checked.

Fig. 3. Blanks for laboratory reports, diet and treatment record.

that can be seen frequently by the house staff, and the great majority of patients discharged will, of course, make their later visits to the Out-Patient Department. By keeping in mind the needs of the house records the Out-Patient Staff can render valuable assistance by sending in to the record room notes of interesting developments in cases seen by them that have been in the house. The rush of an out-patient clinic will not permit this unless it is made easy for them, and we have adopted the plan of having blanks for the purpose in each clinic, which can be filled out and collected with the out-patient cards. If the out-patient man has barely time enough to write the patient's number and the date on one of these blanks the record clerks will later collect it, will look up the out-patient note for that day and transcribe it to the house record. It must be admitted that an out-patient staff will not supply a great deal of this data without pretty persistent prodding.

The follow-up system will be mentioned again in connection with the work of the record room.

(f) The references to former and subsequent admissions and transfers make it easy to find the complete record of a case which may be bound in several different volumes.

(g) Spaces for two each of blood and urine examinations are provided here merely to save the extra laboratory page in the many cases which do not have more examinations made. While striving for completeness, a scarcely less important item in promoting actual usefulness of the records is compactness and the avoidance of too many sheets. Economy in paper, printing, binding and fireproof storage are also favored by condensation. It is economy to buy a good grade of paper for the history and printed forms and to use both sides of it.

II. *The graphic chart* (Fig. 2) is lithographed on the back of the title sheet. (Charts with blank backs are provided for continuing the graphic records after the first one has been used up.) Lithographing produces much finer and more accurate lines than ordinary ruling and, considering the

number of lines here desired, it has been found practically no more expensive.

The chart as here presented is the result of numerous attempts to concentrate so far as is consistent with clearness and accuracy a large amount of clinical data where it can be taken in at a glance and compared. Ordinarily there are seven graphic curves on the chart,—temperature, pulse, respiration, systolic and diastolic blood pressure, fluid intake and urine excretion. These curves are distinct when green dots are used for systolic blood pressure, green circles for diastolic, red dots for urine and red circles for fluids. Black circles instead of dots are used for stethoscopic counts of heart rate and for rectal temperatures. On the right the method employed in taking blood pressures is recorded in each case. At the bottom are spaces for recording patients' weights, baths, solid or liquid bowel movements, vomiting, quality of night's sleep and hours out of bed. One or two blank columns are reserved for special items such as repeated measurements of lung capacity, strength tests, urea content of blood, etc., which it is desired to show in connection with the other data on the chart.

The chart is divided into spaces for twenty-one days which allows about the ordinary daily space for a "b. i. d." graphic chart. By fine vertical lines, however, each daily space is subdivided into six small spaces of a little over one millimeter each, which represent four-hour periods. Nurses use moderate sized dots and place them accurately on these fine lines, the hours to which they correspond being printed at the top of the chart. It is thus possible in fever cases to use the chart for four-hourly records without increasing the space ordinarily allowed for the twice-a-day record. The sense of proportion on the chart is thereby preserved and in cases of great duration the four-hour record can be preserved in toto. Such charts are pasted together end to end and folded; vertical red lines separating weeks are a convenience.

Nurses who are used to inscribing large dots far apart object to this careful work at first. Once accustomed to it, however, they are invariably pleased, are more painstaking, make very much better looking charts than formerly, and have to recopy them less often.

In the occasional case when temperatures are taken oftener than every four hours, the numbers at the top representing hours are crossed out and replaced by others, two or more large spaces being used for one day.

III. *The Laboratory Sheet* (Fig. 3, first four forms). The advisability of using such a sheet is debatable, and some of the hospital staff would prefer to have urine and blood as well as all other examinations entered in chronological order with other clinical notes. The advantage of the blank, however, is appreciated in cases where many examinations of one kind are made; it being much easier to run the eye down a column containing a dozen reports of hemoglobin or albumin percentages or guaiac tests than to hunt in a dozen different places for those results. For this reason we use a laboratory sheet for reporting the three or four examinations most likely to be often repeated. On one side blood and urine are each given space for twelve reports, on the other are reports of sputum and feces. To guard against incompleteness, which is the principal danger in the use of printed forms, provision is made for recording such additional facts as (1) the instrument used for measuring hemoglobin, (2) number of cells on which the differential leucocyte count is based, (3) more accurate specification of the dates of urine specimens, (4) methods used for qualitative testing and quantitative determination of albumin and sugar, (5) methods used in testing for occult blood. When more space is required, as in describing an abnormal blood smear, more lines are used, or reference is made to an extended description in the body of the record.

Diabetics and special blood cases are given charts for showing graphically their progress; and blank paper suitable for charting is kept for miscellaneous charts, e. g., salt excretion, etc.

IV. *The Order Sheet* (Fifth form in Fig. 3,—same ruling on both sides of sheet). Orders for all medicines and treatments are written by the house staff on one of these sheets separately for each patient; thus giving a permanent treatment record in the physician's own hand to be bound with the history. Nurses check orders when they have taken cognizance of them, and in the case of single doses or treatments give the time when they are administered. Other remarks sometimes entered are "refused," "vomited," etc. "P. r. n." orders are each designated by a letter placed in a column for that purpose; and whenever such an order is used by the nurse she makes a record of the fact by writing on this order sheet the designating letter and the time. Nurses rule a vertical line through all orders that are finished, so that the eye can take in at once the "live" orders, and there is no necessity for keeping a separate list of standing orders. Except in the occasional case of verbal orders at night, which should be signed in the morning, nurses are to be strictly forbidden to fill orders which are not written on the order sheet.

When these sheets first replaced the customary ward order book fears were expressed that orders would be overlooked by nurses. To obviate this, interns whenever entering an order write also the patient's bed number on a pad for the purpose on the nurses' desk. During our three years' experience with individual order sheets we have not once heard complaint of orders being missed from this cause.

V. *The Diet Record sheet* is ruled on both sides in the manner shown by the bottom form in Fig. 3. It is used for cases of diabetes and others in which it is desired to keep accurate records of food intake. Nurses weigh separate articles of food while serving them on the same plate, using the convenient little Chatillon scales for the purpose.

In addition to these five forms two others of great importance in the cases which require them

are the operation record and the sheet for clinical and autopsy diagnoses.

The operation report provides several lines at the top for pre-operative diagnoses and signatures. Members of the surgical, as well as other staffs who study cases before operation, are to write their diagnoses over their own signatures before operation. For example the medical service will keep these blanks on hand, and before transferring a patient to surgery will write their diagnoses and send this sheet with the patient to the surgical ward. A chart is then provided on this sheet for recording pulse, respiration, blood pressure, etc., during anesthesia; the usual facts in regard to the amount of anesthetic used, time of beginning, duration of operation, etc., are recorded in connection with this chart. Then follows space for notes on the recovery—pain, vomiting, etc. The back of the chart is for a description of the operation, the only definite spaces set off being one for description of organs explored during the course of the operation and one for recording the names of the operating crew including nurses.

The clinical and autopsy diagnosis blank is an important means of securing definite correlation between clinical and autopsy findings devised by my colleague, Dr. J. L. Whitney. The feature about it which makes it actually secure the hitherto elusive *written* pre-autopsy diagnoses by the clinicians is the permit for autopsy which is on the sheet. The superintendent does not sign this permit until the sheet is presented to him properly filled out with the clinical diagnosis in great detail and a short résumé of the essential features of the case for the benefit of the pathologist. The pathologic diagnoses are later typewritten under the clinical diagnoses (both of these on the front of the sheet) and the pathologist marks the clinical diagnoses which were found to be correct, those wrong, those doubtful, and the autopsy diagnoses missed by the clinicians. On the back of the sheet beneath the clinical résumé the pathologist makes remarks on any of the clinical findings which did not find satisfactory explanation in his autopsy diagnoses. This sheet is bound with the clinical records.

References.

1 Kilgore, E. S.: Last number of this Journal.
2 Whitney, J. L.: Boston Medical and Surgical Journal, November 18, 1915.

THE APPLICATION OF ANOCI ASSOCIATION TO OBSTETRICS.*

By CARL L. HOAG, M.D., San Francisco.

The present furor about "twilight sleep" has brought great pressure to bear upon the conscientious physician who does not feel justified in using a procedure which entails such risks. Recognizing the general demand for the more extended use of anesthetics in labor, he will doubtless welcome any method which secures this end without too much danger to mother or child. This consideration has prompted me to report the following procedure without awaiting the accumulation of a large number of cases. As will be seen, the method is not new in itself but is the application of a now well accepted principle to this new field of obstetrics.

Three years of trial in the surgical field has firmly established the efficiency of anoci association in the reduction of shock and distress, with a corresponding decrease in the time of convalescence. It has already done much in removing the fear of operative procedure from the lay mind. The principle objection has come from the surgeon because muscular relaxation under nitrous-oxide-oxygen anesthesia is very much less complete than that previously secured by the use of chloroform or ether. Only those have achieved the best results who have fully realized that the nerve blocking accompanying this light anesthetic must be fully as complete as that necessary for operations under local anesthesia alone.

During the past year nitrous-oxide-oxygen analgesia has been used in obstetrics by a number of men—notably Webster [1] and Lynch [2] of Chicago—with marked success. No untoward effects have been noted on either mother or child. Lynch states that uterine contractions are usually increased. He makes no statement, however, as to the degree of relaxation of the perineum as compared to that usually secured when chloroform is used. If there be any serious objections to the use of nitrous-oxide-oxygen anesthesia in labor it will probably arise at this point. After our experiences in abdominal surgery we cannot expect to see that relaxation of the vaginal outlet which is so essential in preventing severe lacerations. It occurred to me that the same cocainization of the muscles which brings about adequate relaxation of the abdominal wall when anoci association is well carried out should not only overcome this objection but might bring about a distinct advance in obstetric practice. Just as the local anesthesia has made the use of gas-oxygen possible in surgery, the same procedure may make it the anesthetic of choice in labor.

The following case will illustrate the feasibility and distinct advantages of this method:

Mrs. T., aged 22, primipara, confined April 11, 1915, when three weeks overdue. She was a well developed, well nourished woman and labor progressed normally; first stage nine hours, second stage forty-five minutes. Toward the end of the first stage nitrous-oxid and oxygen analgesia was begun by Dr. Harry Tuckey, using a new Teter apparatus. The gas was shut off between the bag and nose piece between pains, so little was lost. Experiencing no pain, the patient worked very well and absolutely at my direction. Just before the head began to dilate the perineum, I turned back the vulval edges and injected the levator ani muscles and perineal body very thoroughly with one-half of one per cent. novocaine. About 20-30 c.c. were used. The effect was striking. The outlet soon relaxed and became very flabby, and when distended by the oncoming head (R. O. A.) dilated readily without the least sense of pain or the increased effort on the part of the patient that we usually see. The head was delivered as easily as if she had been under the surgical degree of chloroform, and without other than a small mucous laceration. The oxygen was then immediately turned on and, as the cord was still pulsating, the baby—then slightly cyanotic—cleared up like magic, became very red and began

* Read before the Pan-American Medical Congress, June 18, 1915.

to cry spontaneously. The placenta was delivered by the Credé method, likewise under gas.

About 100 gallons of nitrous-oxid and 30 gallons of oxygen were used over a period of one hour. The amount of novocaine was about one grain. Many times that amount is not toxic and could have been used if necessary to secure complete relaxation.

The striking points are:

(1) The delivery without pain, thus insuring better co-operation between the patient and accoucheur.

(2) The greater efficiency of the uterine contractions which shorten the time of labor.

(3) The absence of muscular spasm and rigidity of the perineum due to the blocking of pain reflexes by the local injection, thus permitting slow and gradual dilatation under perfect control. This great advantage cannot be secured by general analgesia alone.

(4) The fact that oxygenation of the mother has an immediate effect upon the child, clearing up any cyanosis that may be present.

Local infiltration of the perineum, besides securing relaxation and anesthesia, also allows of episiotomy at any moment when a laceration seems unavoidable. Following delivery, this incision or any laceration that may result, can be painlessly repaired without prolongation of the general anesthetic.

The anesthetic effect of novocaine is transient and is usually maintained only for thirty or forty-five minutes. In prolonged cases either a secondary blocking can be done when the head recedes, or the original injection of novocaine can be immediately followed by quinine urea as in surgical anoci.

The effect of nitrous-oxid and oxygen on the child has been too well tested by Webster, Lynch and Woodyatt to need discussion here, but we know much less about the effect of novocaine upon the fetus. The amount actually absorbed and reaching the child through the blood stream prior to delivery must be very small and a quantity not greater than that safely used in numerous cases of Cesarian section under local anesthesia.

Whether injection of the cervix will prove of sufficient advantage to justify the added risk of infection is doubtful. At present it does not seem advisable.

There are no dangers in infiltration of the perineum from sepsis or otherwise. The needle is inserted through the vaginal mucous membrane which offers a practically sterile field. Hematome seldom, if ever, develop. Any edema produced by the solutions is quickly absorbed. Repair of tissues is not retarded.

In conclusion, it is my belief that the use of anoci association, that is, the combined use of nitrous-oxid-oxygen analgesia with local infiltration of the perineum, offers a safe and efficient method of conducting labor. It is a logical procedure founded on established principles, apparently free from danger to either mother or child and sufficiently simple to be within the scope of general use.

References.

1. Webster. Jour. Am. Med. Assoc., 1915, lxiv, p. 813.
2. Lynch. Ibid., p. 812.

THE TREATMENT OF CONGENITAL SYPHILIS.*

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When one has the opportunity of seeing large numbers of luetic patients, that drift in from widely scattered sources, a large number of whom have already received some specific medication, it is somewhat disappointing to note how varied, and unsystematic the majority of such treatment proves itself to be. Some of these failures are unquestionably to be referred back to the individual patient, who is either too ignorant to comprehend the necessity for vigorous long-continued treatment, or unwilling to follow the earnest advice of his physician. Despite these extenuating circumstances, and the deceptive promises of quacks, a goodly amount of rather haphazard treatment must be admitted by the profession itself. This is somewhat surprising in view of the extraordinary efficacy of the remedies at our command. And yet this very brilliance of result is occasionally a stumbling block, the patient regaining his health so rapidly that he firmly insists he is cured. The treatment of *acquired* syphilis, has become for the present at least, quite standardized. The combination therapy of old salvarsan, and mercury salicylate injections with the judicious use of the iodides is, if properly administered, almost ideal. It is certainly eminently satisfactory.

The situation is not so simple when we come to the treatment of congenital syphilis. Although the drugs employed, namely salvarsan, neosalvarsan, mercury and iodides, are precisely those used for acquired lues, their exhibition and administration are often quite different, varying according to the age of the patient and the character of the disease. Nor is it as clearly understood how long such treatment should be continued.

Before considering the actual treatment of congenital luetics, it might be well to note the prophylactic measures at our disposal. These comprise first, thorough treatment of syphilitic patients before marriage; second, preventing conception in syphilitic individuals who are already married, during that period of the disease when transmission to the offspring is most liable to occur; and third, thorough treatment of the pregnant mother before the birth of the child. That there would be fewer cases of congenital syphilis if infected parties postponed marriage until they had had sufficient treatment, is quite obvious, and as this problem resolves itself into the proper treatment of *acquired* syphilis it needs no further comment here. It is likewise apparent that married persons known to have the disease in its active stages should be warned that a child of theirs may inherit the disease, and it is accordingly fitting and proper that they take reasonable precautions to prevent conception. Both these measures, however, are beyond the control of the physician. Patients will marry before they should and have children when they should not. But once a pregnancy has occurred, where either mother or father is known to be luetic, it is incum-

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bent upon the physician to institute most energetic treatment of the pregnant mother in the hope of preventing a syphilitic child. Such treatment of the pregnant mother differs in no way from the routine treatment of acquired syphilis. It consists in the intensive use of mercurial injections, the iodides, and the intravenous administration of old salvarsan—"606." The latter is preferable to neosalvarsan, as it is now generally conceded to be more potent. It is probably wiser, if the treatment is begun during the early months of pregnancy, to employ frequent small doses of salvarsan, 0.2 to 0.3 to 0.4 gram rather than the full dose, although it has been shown that salvarsan does not seem to increase the tendency to abortion or hemorrhage. But the total amount of salvarsan should be at least 1.5 gram, and larger amounts are safer.

Such treatment affects the fetus favorably by its curative action on the mother, and in the early stages especially, by preventing disease of the placenta. Furthermore, Meyer [1] has shown in the case of salvarsan, that whereas a normal, sound placenta does not allow arsenic to permeate, the syphilitic placenta does permit the drug to pass through to the fetus.

Findlay and Robertson [2] in a recent issue of the *Glasgow Medical Journal,* record several successful examples of such antenatal therapy. "In no case was the course of the pregnancy interrupted, and the mothers did not seem to suffer much from the treatment. The mothers, as a rule, expressed themselves as feeling better during these than during any of their previous pregnancies." So far as their experience goes, equally good results were obtained whether treatment was commenced as early as the second month or delayed till the seventh month of pregnancy. "This in all probability is to be accounted for by the fact that many syphilitic infants are infected during parturition, the mischief remaining local in the placenta during the whole course of gestation. It is this uterine localization of the disease which accounts for the absence of clinical manifestations in many of the mothers of syphilitic children. Baisch, Trinchese, and Weber [3] working in Döderlein's clinic, found that in the case of every syphilitic child the placenta, both the fetal and maternal portions contained spirochetes, and in common with Rietschel [4] are inclined to the opinion that the spirochete always travels to the child from the placenta. Most authorities agree that during gestation the spirochete may travel along the umbilical cord and infect the fetus, but this according to Rietschel is less frequent than infection by emboli set free during parturition. It would therefore seem exceedingly likely that in the treatment of pregnant women the salvarsan gets easily at the very vascular placenta and destroys the contagium vivum, thus considerably lessening the risk of embolism from living spirochetes."

It is interesting to compare the statistics of such antenatal therapy with the results of no therapy at all. With no treatment of maternal syphilis at all, the primary mortality of congenital syphilis is enormous. In the first year of life, Leduc estimates it at 71%; Zeissl at 80%; Bunch at 90%; Markus at 90%. Hochsinger claims that 93% of syphilitic children have disease of the nervous system.

According to Galliot,[5] when mothers are treated before pregnancy, but not during pregnancy, 82% of the resulting children are born dead.

Mercurial treatment of the pregnant mother has the following results to commend it: Of 217 infected pregnant women showing signs of active syphilis during their pregnancy, who were vigorously treated with mercury and iodides during their pregnancy, 25% of the resulting progeny were born alive, of whom 10% showed signs of syphilis. This is at once a striking improvement over no treatment at all.

Of 163 pregnant infected women, without signs of active lues, so called latent lues, who likewise were vigorously treated with mercury and iodides during their pregnancy, 66% living children were born who were well clinically; 14% were born alive but showed signs of congenital lues, and 19% were born dead. Pinard,[5] Champetier de Ribes,[5] and Potocki [5] by prolonged treatment with mercury and potassium iodide obtained 76% of the children healthy.

Of 128 women with latent lues, who were treated before and during pregnancy with mercury and iodides, 88% living children, clinically well resulted, the remainder showing signs of syphilis. These statistics are surely a strong argument in favor of the thorough treatment of the disease (Galliot).[5]

But the effect of mercury unless long continued is fleeting. This is illustrated in an astonishing manner by the following case reported by Fournier (Meyer).[1] A syphilitic woman was pregnant 11 times. She had no treatment whatsoever during the first seven pregnancies, and the result was seven dead luetic children. During the eighth and ninth pregnancies, energetic mercurial treatment was given, and the result was two healthy children. No treatment was taken during the tenth pregnancy and again a luetic child was born dead. Treatment during the eleventh pregnancy was successful in bringing forth a healthy child. Fournier concludes: "So powerful yet so fleeting is the effect of mercury that, if it were not immoral, I would like to try the experiment of alternately treating and not treating a syphilitic mother, and alternately bringing into the world healthy and syphilitic children."

When salvarsan is combined with such mercurial therapy, the following remarkable results are obtained: Sauvage [6] reporting 93% and Bourret and Fabre [6] 100% cures. These latter statistics may be somewhat enthusiastic, for it must be admitted that many cases showing congenital syphilis after reaching six to 20 years of age, show no specific manifestations whatsoever during the first few years of life. Most of the cases reported were only observed during the first few months or first year of life, and are therefore subject to this reservation. Nevertheless, it would seem that this method of antenatal therapy has much to support it and merits extensive trial.

Another prophylactic measure suggests itself. Supposing an apparently healthy child with nega-

tive Wassermann and negative luetin, is born from parents known to have active syphilis. In view of the fact, above mentioned, that luetic stigmata do not develop in certain cases until long after infancy, would it not be prudent to administer small doses of mercury intermittently to such a child during the first few years of life? In reasonable quantities such therapy would not be harmful. It might be beneficial. It is almost impossible to bring facts or statistics in favor of such a procedure, for the unanswerable criticism can always be advanced that the particular child so treated may never have developed syphilis anyway. But when one bears in mind the extraordinary obstinacy of just those cases where the disease makes its appearance late in childhood, it would at least appear to be an error on the side of safety to prophylactically treat such infants, the progeny of parents recently tainted with syphilis.

THE SPECIFIC TREATMENT OF CONGENITAL SYPHILIS.

A.—Old salvarsan. Old salvarsan, unfortunately, has not the wide application in congenital syphilis, that it has in the acquired form, not because it is less efficacious but because of the difficulties of administration. Even in acquired syphilis its intramuscular use has been largely abandoned, the pain resulting from the injection and the necrosis and sloughing that not infrequently supervene are very serious objections; and in children the delicacy of the tissues should absolutely prohibit its use in this way. However, old salvarsan can and should be used intravenously whenever there is a vein of sufficient size at the bend of the elbow. I purposely restrict its use to the site mentioned, because experience so far seems to be against the administration of the drug in concentrated form. It should be well diluted and the consequent large amount of fluid to be injected must be allowed to flow into a vein in a position where the flow can be easily controlled. The jugular vein has been used and likewise the veins of the scalp, but whereas these routes are excellent in the case of neosalvarsan where highly concentrated solutions can be used and the operation quickly finished, it is difficult to keep the child quiet enough for a sufficiently long period of time to permit the steady flow of 50 to 100 cc. as is the case when old salvarsan is used. In view of the frequency of these injections it does not seem advisable to anesthetize the child, particularly when other efficacious drugs are available. Old salvarsan should only be given intravenously, and only into a vein of the forearm. Its dosage must be regulated according to the age and size of the patient, and the first dose should always be exceedingly small. Even in the adult, there is a growing tendency to use smaller individual doses, especially the initial dose; that is from 0.2 to 0.4 gram instead of 0.6 gram. It is evident that much greater caution is necessary in young children; 0.01 gram to every kilo or 2¼ lbs., is a safe average. It is probably a safe custom to place such children in a hospital over night, though recently I permitted a child of 12 to go home after receiving 0.35 gram of the drug. In the comparatively few cases where old salvarsan can be used, the results are highly satisfactory. Just as in acquired lues, mercury should invariably be used in combination with the salvarsan. Neither alone is as reliable as both together.

B. Neosalvarsan. Neosalvarsan has a wider field of usefulness in congenital syphilis than in the acquired form and for the following reasons: Its use in acquired lues is largely a matter of convenience, and can be entirely displaced and should be displaced by the more powerful effect of old salvarsan. But in inherited lues it is invaluable because of the high concentration in which it may be injected. It can be employed in two ways: first, intravenously, using the veins of the scalp, as first suggested by Noegarrath[7] in 1911. This is the method of choice in infants up to about two years of age. Simpson and Thatcher[8] in 1913 advocated the use of the external jugular, but in the technic they describe, an anesthetic is necessary, the vein being cut down upon and a cannula inserted. Such a drastic procedure was justified at the time when it was thought that one large dose would cure the disease, but since experience has demonstrated the necessity of frequently repeated injections, it would be wiser to use other methods at our disposal. By utilizing the veins of the scalp, neosalvarsan can be given in 3 or 4 cc. of saline or freshly distilled water in an ordinary Record or Luer syringe, and in a very few minutes. This ease, convenience and speed of administration has much to recommend it. The initial dose should be calculated from 0.015 gram per kilo; that is about 0.05 gram for a new-born infant, gradually increasing in successive doses to 0.2 or even 0.3 gram per injection. This dosage has been used with safety and success. Slight reactions such as vomiting, diarrhea, and occasionally fever will result, but no more so and no more serious than occurs frequently in adults.

The other method of administering neosalvarsan was first recommended by Wechselmann,[9] and has not gained the recognition it deserves. I refer to the so-called epifascial method of injection, and applies especially to those children between the ages of 2 and 7 who have neither veins of the scalp for intravenous neosalvarsan or veins of the forearm for old salvarsan. Wechselmann employs it in his routine treatment of adults, never giving neosalvarsan intravenously but only epifascially, reserving the veins for old salvarsan. The technic requires some practice, but once learned, is really very simple, quick, and convenient. He found that intramuscular and subcutaneous injections were exceedingly painful, but that a space existed between the two, just above the gluteal fascia which proved to be an excellent depot for the drug. He gives the following detailed directions which must be scrupulously observed in order to obtain satisfactory results. First, the needle is inserted and the point moved in a pendulum manner back and forth. If just over the fascia a scratchy grating sensation, sometimes audible, usually palpable is transmitted to the needle as the point scrapes over the fascia. In children this is more difficult to determine because of the greater delicacy of the

fascia, and Kern,[10] reporting on the use of the method in children, states that it is not obtained in many instances. Second, a rotary twist is given the needle along its perpendicular axis in order to be certain that it is quite free and not entangled in a nerve, blood vessel or connective tissue bundle. It should be freely movable. Third, one cc. of sterile salt or water in a Record or Luer syringe is injected. The piston should require only the lightest pressure to force the fluid in. Fourth, the syringe is removed and the salt or water should immediately regurgitate through the needle, indicating that it is next to the fascia. If these conditions are fulfilled the neosalvarsan is then injected. As high concentrations as 100% can be used, so that in infants doses of 0.05 to 0.1 gram neosalvarsan are dissolved in 0.2 to 0.3 cc. of fluid. A syringe of 0.5 cc. capacity divided into ten parts is useful for this purpose. I had the opportunity of seeing these injections in Wechselmann's clinic and of examining the buttocks of the patients for induration, abscess or sloughing. These were adult patients and I heard no complaints and detected no infiltrations. It would seem to be a very useful addition to our means of treating congenital lues and deserves extensive trial. It requires considerable practice however. The injections can be repeated every five to eight days.

C. For the sake of completeness, mention might be made of the Swift-Ellis,[11] Ravaut, Byrnes and other methods of intraspinous medication. Undoubtedly these procedures can be used in congenital syphilis. The technical difficulties will always be a handicap and prevent widespread adoption, but the occasional case resisting all other forms of treatment might be benefited by such measures. But it would seem prudent, for the present at least, to be rather cautious with such radical procedures, and it would seem reasonable perhaps to await the conviction that these innovations are really as brilliant and invaluable as some of their enthusiastic advocates claim.

D. Mercury. Mercury is fully as valuable in the treatment of inherited syphilis as salvarsan and neosalvarsan. The neglect of it, in such therapy, would be a glaring error. Any course of treatment in which it is omitted or haphazardly used, is decidedly incomplete. However, the same difficulties that limit the use of old salvarsan in congenital syphilis, confront us in the exhibition of mercury. I refer to our inability to employ the ideal method—that of injection. Mercury should never be injected intravenously, even in the acquired form, because the tendency to thrombosis is too great and the veins at our disposal should be reserved for salvarsan. But the intramuscular injection of soluble and insoluble preparations of mercury must also be omitted in congenital syphilis, because of the delicacy of the infant's tissues. This is to be regretted, for the *injection* of mercury is the most satisfactory method of its administration. In cases of inherited lues past the adolescent period, injections can be used, but only rarely is it possible to use them earlier than 15 years of age.

There are really but two other ways of giving mercury—through absorption from the gastro-intestinal tract, and through inhalation of the vaporized metal. The former refers to mouth medication, the latter to inunctions, baths, plasters, the mercury aprons of Welander and the pillows of Merget, for in all these modifications, the inhalation of the vaporized metal is the chief manner in which the mercury gains access to the body. In the adult there is probably but little absorption through the skin. In children, however, the skin is more absorptive, but being likewise more delicate, is more readily irritated by the drug, and consequently greater care must be exercised in its use. Frankenstein of Berlin has recently applied more directly the inhalation idea, having perfected a machine which vaporizes the metal through electric heat, which is then inhaled through an inhalation apparatus. And it might be appropriate to note, therefore, that all rubbing of mercury should be done in a warm closed room, thus aiding the vaporizing of the metal and its inhalation.

The official blue ointment, the oleate of mercury or the Neapolitan ointment may be used for inunctions. The latter are not as potent, but are less dirty and disagreeable. The oleate consists of 10% to 25% oleate of mercury in olive oil; the Neapolitan, in equal parts of metallic mercury rubbed up with benzoinated lard. The skin of children will not permit of vigorous rubbing, nor is this necessary; very gentle application for twenty minutes to half an hour sufficing. The soles of the feet are good sites for the inunctions, since the skin is thicker. In infants a convenient method is the placing of a pad of the ointment under the belly-band. If the rubbing is done by an attendant or nurse, a rubber or leather glove should be worn. Such inunctions should be given six days out of seven for about a month at a time with intervals of two weeks to a month between courses.

In very small children and infants, the most satisfactory mercurial therapy consists of mercurial baths. A wooden washtub should be used and filled with warm water to which 20 to 30 grains of the bichloride with an equal amount ammonium chloride is added. The child should remain in the bath 10 to 15 minutes and such baths should be given every day or every other day. It often combines local with general treatment, if there happen to be skin lesions. It avoids irritating the delicate gastro-intestinal tract.

Lastly, there remains the oral administration of the drug. In adults it is necessary, occasionally to have recourse to the digestive tract, either when a patient goes to the country and can not receive injections, and when for reasons of concealment he prefers not to use the ointments. In children the latter factor is not so vital, but there are nevertheless important objections to mouth medication. Absorption from the intestine is uncertain and slow. It is often impossible therefore to realize how much mercury the patient's body is actually receiving, however accurate the amount may be that he swallows. Furthermore, such treatment is left entirely in the hands of the father or mother, and though the directions may insist on three times a

day, doses are frequently omitted. And when taken faithfully derangements of the intestinal tract are not uncommon. The gray powder, mercury with chalk in doses of 1/4-1/2 gr., or calomel gr. 1/10-1/4 tid., are probably as good as any of the many preparations. The administration of mercury by mouth is, then, the least desirable of all methods, and although it is still the commonest form in which it is employed, it should become the least common; there will always be occasions where its exhibition will be handy and valuable, but it should cease being a routine procedure.

E. Iodides. The iodides occupy an important place in the specific therapy of congenital syphilis. They should be given far more frequently than is generally the case, and their mode of action and precise value should be more clearly appreciated. Occasionally one meets a patient who has been told that he has syphilis and whose only treatment has been K. I. Such therapy is useless. The iodides should never be given without mercury or salvarsan. The iodides do not cure syphilis, they are not spirocheticidal. The destruction of the causative organism is accomplished by the mercury and salvarsan, but the wreckage that results is swept away by the iodides. They occupy a singular role therefore in supporting and completing the work of the destroyers. The function of the iodides is to dissolve and eliminate. Although their most spectacular efficiency is demonstrated in the tertiary processes where gummas are magically made to vanish under their influence, they should likewise be used in the earlier stages of the disease, for the principle of their action remains the same, and it is at all times beneficial to aid in the elimination of the syphilitic poison.

The two commonest preparations of the iodides are the saturated solution and the combination in liquid form with mercury in the so-called "mixed treatment." When exceptional circumstances demand the use of mercury by mouth, this mixed treatment is quite satisfactory. It must be remembered that only the bichloride or biniodide should be used in such a mixture, for the proto salts are changed by the iodides into the binary forms, making a more powerful and perhaps dangerously high dosage. If mercury is given in pill form, it should be taken an hour before meals, and the K. I. an hour after meals, so that the former will have left the stomach before the latter arrives. As a routine preparation the saturated solution is very satisfactory. It should always be given in high dilutions, preferably in a large glass of milk, always after meals, as it irritates an empty stomach, and in much higher dosage than is generally prescribed. The usual dosage for adults will not be high for little children, namely 30-45 gr. per day, and it is far too low for adults. Probably little good is accomplished in adults under 75 grs. per day and many cases require several hundred grains per day. So for children an initial dose of 5 gr. tid. is quite conservative and should be rapidly increased. It is a curious paradox remaining unexplained, that iodism is more common with small doses of K. I. than with enormous doses. Sajodin, a pleasant palatable tablet form of iodide is to be recommended in congenital syphilis. Its superiority over the saturated solution must be admitted, but it has no use in the treatment of acquired syphilis, as the proper dosage would be too expensive. But those in comfortable circumstances can take advantage of this excellent preparation for their luetic child, as the dosage for such cases would be within their means. We may some day have a satisfactory preparation for injection. At present iodopin can be used in those cases where iodides can not be tolerated by mouth or rectum, but the injections are rather painful. There remains another preparation, iothion oil, an odorless colorless preparation, which is rubbed into the skin. It is also somewhat expensive, but it may prove a valuable addition to our iodide therapeutics. I have used it successfully in two cases of syphilitic phlebitis and luetic periostitis.

F. Summary of specific medication. In the first few years of life, mercurial baths or inunctions with intravenous neosalvarsan solutions by the veins of the scalp. From two to eight years of life, mercurial baths or inunctions with epifascial injections of neosalvarsan. From eight to 15 years of age, whenever possible, mercurial intramuscular injections, with intravenous old salvarsan, using the veins of the forearm; otherwise neosalvarsan epifascially. The iodides to be used at all ages, in all forms of the disease.

Brief mention must be made of the importance of careful attention to the general hygiene of all children suffering from this disease. Lack of time forbids any detailed consideration of this essential aspect of any satisfactory treatment. It comprises scrupulous care of the skin, bowels, mouth and scalp, the necessity of ferruginous tonics, fresh air, cheerful surroundings, and the intelligent and sympathetic co-operation of the parents.

A consideration of the treatment of congenital syphilis to be complete must include the social treatment of the disease. But this also lies outside the scope of this paper. It may merely be mentioned that this would include the education of parents and prospective parents, special schools for feeble-mindedness, and the question of compulsory notification of still births, premature deliveries and miscarriages due to syphilis, and all cases of congenital syphilis, so that the law would insist on the treatment of such parents in order to insure their future progeny against the ravages of the disease.

THE CONTROL OF TREATMENT.

To what extent do the Wassermann reaction and Noguchi's luetin test aid us in controlling this treatment? It is generally assumed to-day that these tests must become negative and remain so, if the treatment is to be considered successful; that there can be no cure unless these conditions be fulfilled. Are we justified in this assumption? It is difficult, in our present knowledge, to give a definite answer to this question. We must acknowledge that frequently the treatment of this disease has been and still is inadequate, not intensive enough nor long enough continued. It is a wise plan therefore to set up such ironclad standards, the fulfillment of which demands, so often, years of vigorous treat-

ment. But it is one thing to raise obstacles, the surmounting of which insures on the whole more thorough treatment of the disease; and quite another matter to believe implicitly in these standards, to feel convinced that a case *is* cured when the Wassermann and luetin have been repeatedly negative, and to insist that the doctrine is established which maintains that treatment must be continued while these tests are positive. Such conclusions may be correct, but it remains for the future to prove such a contention. As long as the nature of the Wassermann reaction remains a mystery, so long as non-specific antigens give more delicate and as reliable tests as alcoholic extracts of syphilitic livers, we must defer positive statements concerning these tests. How strangely the clinical condition of the patient compares with the strength of the Wassermann response, must have occurred to anyone who has seen treated and controlled large numbers of luetic patients. It is not so rare to see a patient, who feels splendidly and is clinically well, and who has received thoroughly the standard mercury salicylate old salvarsan therapy, but whose serum nevertheless is strongly positive; and again another patient, just as well, having undergone precisely the same treatment, with a negative reaction. And the opposite picture occurs as frequently—a negative Wassermann in a patient poorly treated, showing unmistakable evidences of the disease. These apparent contradictions even if not the rule, must nevertheless be explained before we are justified in demanding negative Wassermanns, negative spinal fluids, negative luetins from our well treated clinically healthy patients. The warnings of Keyes [12] are very timely in regard to the blind acceptance of a reaction that we do not even understand. The future may show that these standards are right; for the present it is certainly wise and conservative to follow them; but it is not necessay to make law out of uncertainty. If we say that a definitely positive Wassermann almost invariably means syphilis and a negative Wassermann means nothing, we have said all that we have a right to say at the present time. And this, of course, assumes that the test has been performed by a competent serologist. In the light of our present knowledge, it is precarious ever to speak of a cure in syphilis, except in those rare cases where the disease is aborted almost immediately after inoculation. To speak of a cure in congenital syphilis is even more unwise. Having the disease under control is quite another matter and should be possible in most instances.

Finally, if congenital syphilis in its entirety is to be properly and thoroughly treated, it should be in charge of the internist. Syphilis is a medical disease. Gout is not controlled by the orthopedist, even though his special knowledge may be necessary for certain aspects of the case. Nephritis is not treated by the ophthalmologist, merely because albuminuric retinitis happens to be found, though his co-operation and expertness is invaluable. Typhus fever is not treated by the dermatologist though spots appear upon the skin; nor diabetes because gangrene sometimes occurs; nor scarlet fever nor measles, though the diagnostic skill of the dermatologist is a powerful aid in uncertain cases. And likewise, therefore, it must be admitted that syphilis, whether acquired or congenital, is an infectious medical disease, whose treatment should be in the hands of the internist, who should better be in a position to maintain a broad outlook over the disease in its entire course. He is interested in all its manifestations; as much in its destructions of bones and joints, in its production of deafness and blindness, as in its ulceration of the skin, production of feeble-mindedness, and invasion of the heart, blood vessels, and liver. At all times in the control of this treatment he needs the special knowledge, skill, advice and co-operation of the specialist, and such co-operation is absolutely essential to the proper treatment of the disease.

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Discussion.

Dr. H. H. Yerington: I feel that during the past two years the salvarsan treatment of congenital lues, both in infants and children, has not been used quite as much as it was when the drug first came out, for the reason that there have been some unfavorable reports in this country by some of our physicians. These men get unfavorable results because the drug is not repeated often enough. In these latent cases of lues, the syphilitic virus is very firmly imbedded, more so than in any other cases except the late nervous lues, and lately we have been injecting these children once a week for six or eight weeks, and in some cases even then the blood reaction is still positive. I should say that we have injected 50 infants under six months old with salvarsan, the youngest four days old. All are put under an anesthetic because it is hard to keep the needle in the vein if there is any movement on the part of the child. Up to the present time I have used the old salvarsan only. Our results have been so good with it and it is so easy to prepare that we have not tried neosalvarsan. In infants, about 0.1 gms. in 25 cc. of sterile water is injected with a small Luer needle into a vein in the bend of the elbow.

Dr. Langley Porter: A very brilliant man in pediatrics—Tobler of Breslau—is dead, and a few weeks before he died he called the attention of the profession to the fact that it was an easy matter to use the longitudinal sinus, with an open fontanelle, for the injection of salvarsan and other fluids, and as a site for the withdrawal of blood for the Wassermann test. The sinus does not collapse, the

needle goes into it easily, the head can be held firmly, and the procedure is rapidly and certainly accomplished. Tobler reported some fifty cases in which the sinus was used for such purposes without any ill results.

ROUTINE RADIOLOGICAL DEMONSTRATION OF GALL-STONES.

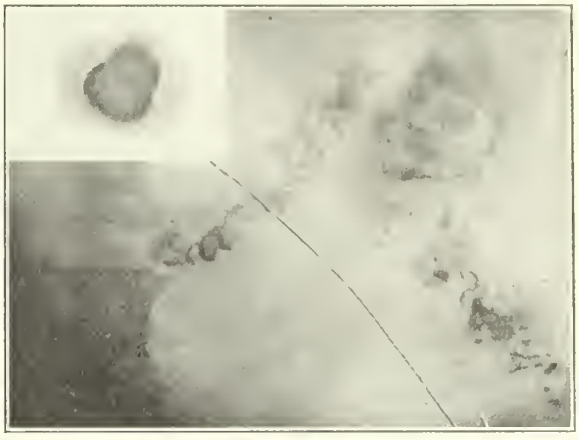
By C. W. LIPPMAN, M. D., Visiting Roentgenologist, San Francisco Hospital.

In August, 1913, Dr. Cheney at a gall-bladder symposium presented a brief and very interesting discussion of the gall-bladder problem.

"I think one of the most important lessons that have been set forth here to-day is the increased knowledge of the frequency of gall-bladder disease. The man who is interested particularly in digestive work and has cases coming to him because of gastric disturbance, is learning more and more to discover how often the real seat of disease is in the gall-bladder. As Mayo says in one of his articles, to treat the stomach in one of these cases of gall-bladder disease is 'like pouring water on the fire alarm box to put out the fire.' The large proportion of disturbances that we used to call gastric neuroses are due to diseases of the appendix or gall-bladder. Unfortunately there is no type of gastric disturbance that we can say always is due to gall-bladder disturbance. Sometimes there is hyperacidity and the case resembles ulcer; sometimes there is subacidity and it resembles cancer; sometimes atony and stasis from adhesions, resembling obstruction of the pylorus. In any of these cases treating the stomach does no good, and this lesson seems to me the most important. One point that Dr. Moffitt has particularly dwelt upon is the importance of a careful history. When we sift down the objective evidence of gall-bladder disease by physical or laboratory examination, it is very largely small and we must make our diagnosis largely upon the clinical history. If this has been carefully taken, it is usually quite definite before the end of the history is reached. Physical examination is so often unsatisfactory, and the findings on physical examination of the gall-bladder region as compared with the findings at operation are so disproportionate, that we have learned not to trust so much to the physical signs provided the history is definite.

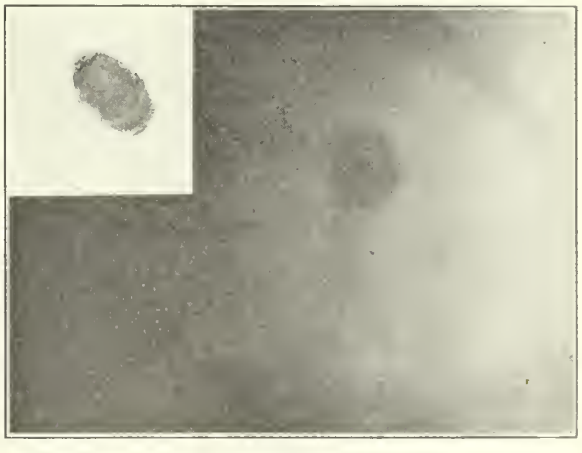
"In regard to treatment, it has seemed to me for some time past that if we could draw a line between cases of cholecystitis and gall-stones we would have the dividing line between cases suitable for medical treatment and for the surgeon. If we know that a patient has stones in the gall-bladder, that patient should have his stones out as promptly as possible. On the other hand if we can establish a diagnosis of chronic cholecystitis, we can aid by medical treatment. But so many times the history of recurrent cholecystitis resembles so closely that of stones in the gall bladder that it is very difficult to make a diagnosis between the two."

How extremely important to the patient to know definitely that these minor symptoms, vague and often misleading, definitely mean gall-stones. This is my theme of the evening—the actual demonstration of gall-stones on X-ray plates. My work simply follows in the footsteps of Pfahler and the men like Case who have developed the radiologic demonstration of gall-stones to a very high degree of accuracy. The estimates of direct



Case I. Upper left-hand corner radiograph of stone after operation.

demonstration upon the plate vary between 40% and 60%. Case demonstrated gall-stones in 48 out of 1,000 routine gastrointestinal examinations. That is nearly five per cent. of all cases showing gastrointestinal disturbances. According to our best statistics not more than 10% of these patients should have had gall-stones, so Case feels sure that he has demonstrated 50% of the gall-stones present. Of course, the only logical way is to take routine gall-stone plates of all cases which are about to be operated on. This is the only accurate way of getting a percentage of error. After the first of the year I hope to be able to do this at the San Francisco Hospital.



Case II.

The indirect evidence of gall-bladder disease brings up the value of the radiological examination appreciably. I mention them in passing:

(1) Hepatofixation of the stomach,
(2) High fixation of the hepatic flexure,
(3) Distortion of the duodenal cap,
(4) Tenderpoint outside of the duodenal shadow.

In taking up the subject of routine direct gall-stone diagnosis by means of the X-ray plate, I wish to emphasize as always the fact that the correlation of the whole clinical picture and findings is absolutely necessary to any accurate diagnosis. Because a shadow in the gall-bladder region may be (1) a right renal calculus, (2) calcareous deposits in a tuberculous kidney, (3) calcareous deposits in the cartilages of a rib, (4) a calcareous lymph node. Nephrolithiasis may easily be ruled out either by pyelography or by plates at different angles—the renal stone always staying within the renal shadow, whereas the gall-stone will at one time coincide with the renal shadow, at another time be outside of it. Besides we can demonstrate the gall-bladder itself in the great majority of cases. The same method will prevent error in calcareous tubercular kidneys. Calcification of the costal cartilages is very easily recognized by a careful study of the plates. Stereoscopic plates I have found of rare necessity. Calcareous lymph nodes are fairly common but usually show a ragged irregular appearance with indistinct outlining of the edges. There are usually areas of greater density in the shadow giving it a mulberry appearance. A fifth source of error which I wish to mention is the enterolith. This caused me to be doubtful in the case which I wish to dilate upon this evening.

Mr. A. W. B., a long, lean, taciturn man of 54, is sent in with a question of carcinoma of the stomach or duodenal ulcer. His history was rather difficult to get as he was not an observant type of man. Six and a half months ago he had a severe pain in the pit of his stomach. It lasted for one and a half hours. The family practitioner gave him morphine and told him that he had acute gastritis. He was sallow at the time but so far as he knew not jaundiced. For two months thereafter he had pain and occasional vomiting two hours after eating. Eating did not relieve pain. He gradually came to live on a diet of postum and eggs. For four months he had no pain. Then the pain returned, but this time four to five hours after eating. He had vomited several times but brought up no blood. He had noticed no black stools. The pain had never awakened him at night. If he didn't eat, he had no pain. He had also been constipated since his first attack. There had been a loss of over 30 pounds in weight. His physical examination was negative except for a palpable liver with a questionable nodule. The man looked sick. Fluoroscopically the stomach showed no residue after six hours, there was no defect in the stomach outline, the antrum was perfect in form. The cap of the duodenum was perfect. Radiologically so far as we may, we had ruled out gastric ulcer and neoplasm and surgical duodenal ulcer. The cardiac end of the esophagus showed a moderate degree of spasm. The next day the laboratory findings were assembled. There was a mild grade of secondary anemia (4,580,000 erythrocytes 80% hemoglobin, with a leukocytosis of 13,200, 72% polymorphonuclears); the stool was negative for occult blood and iodophilic bacteria; the gastric contents contained no free HCl but much free blood. The urine was negative except for very large amounts of urobilinogen. This pointed to some disturbance in the biliary tract. After observing a normal colon, the patient was thoroughly cleaned out and gall-stone pictures were made on the following day. A clean cut shadow of a stone was seen lying within the shadow of the colonic lumen. There was also some stasis of bismuth. A tentative diagnosis of gall-stone with adhesions, was made. Four days later the plates were made for confirmation of the shadow but the bowel was so well filled that the gall-stone could not be differentiated. Further delay was not advisable, so the patient was returned to his doctor with a diagnosis of gall-bladder disease with the possibility of malignancy and colonic adhesions. The operation was performed by Dr. I. W. Thorne. A single large gall-stone with a gall-bladder adherent to the duodenum was found.

I have demonstrated four other gall-stone cases within the last two months. Three of my cases have been operatively confirmed. One of the unoperated cases developed jaundice within 48 hours of the examination. The other unoperated case is in the country and I have not heard from the doctor. Several operated cases which were diagnosed clinically as gall-stones, on which I could demonstrate the gall-bladder but no stones, showed no gall-stones at operation.

Before closing this paper I wish to emphasize two points, firstly, the direct visibility of the gall-bladder shadow on technically perfect plates; secondly, the absolute necessity of the bismuth examination because of the indirect evidence of gall-bladder adhesions brought out thereby.

Note.—Unfortunately neither the faint shadow of the gall-bladder itself nor faint gall-stone shadows can be reproduced, but must be seen in the original.

DR. CARLOS J. FINLAY,

Discoverer of the Theory of the Transmission of Yellow Fever by the Mosquito.

HIS BIOGRAPHY.

By DR. E. B. BARNET, Technical Delegate of the Department of Health and Charities of the Government of Cuba to the P.-P. I. Exposition.

In view of the fact that one of the most brilliant discoveries of the age (fully as important to tropical America as that of the immortal Jenner), the transmission of yellow fever by the mosquito, was made in Cuba, and that with this discovery is connected the name of the eminent Cuban physician Dr. Carlos J. Finlay, and on account of his recent death it would appear opportune at this time to go into the life history of this illustrious man. His death occurred in Havana, Cuba, on August 20th, having reached the age of 82 years.

The work of Finlay has opened up the heretofore closed path of progress and civilization in tropical America. Without detracting in the least from the merits of Drs. Reed, Carroll, Agramonte, Lazear, Gorgas and others who contributed in the practice of exterminating the mosquito as a measure of sanitation, it is possible to declare that without the Finlay theory, the gigantic work of the Panama Canal could never have been accomplished.

The same sanitary plan which was carried out in Cuba, was enforced at the Canal Zone, thus confirming the ideas of this brilliant mind.

In an address delivered at Baltimore in April 1901, Dr. Walter Reed made the following statement: "to Dr. Carlos J. Finlay must be given, however, full credit for the theory of the propagation of Yellow Fever by the mosquito."

Dr. Carlos J. Finlay was born in the city of Puerto Principe (now Camaguey) in the Island of

Cuba, on the 3rd of December, 1833. His father was Edward, a Scotch physician, and his mother Isabel de Barrés, a native of France. While still in his infancy, the family moved to Havana, where the boy grew to his eleventh year, residing at times in the capital and at times in Guinimar. He received at the same time his school education at the hands of his aunt Anna.

In 1844 Finlay was sent to France and studied in a school at The Havre until 1846 when he had to return to Cuba on account of an attack of chorea. He returned to Europe in 1848 to complete his education in France, but the revolutionary movements of that year obliged him to remain for a short time in London, and during one year in a school at Mentz on the Rhine. He entered college at last in Rouen where he continued his studies until 1851 when he returned to Cuba to convalesce from an attack of typhoid fever. Later on he came to Philadelphia, Pa., where he graduated in Medicine on the 10th of March, 1855, from the Jefferson Medical College, and incorporated his diploma in the University of Havana in 1857, and began the practice of his profession.

In 1860-61 we find him in Paris following the hospital clinics and taking up some special studies, specializing somewhat in ophthalmic surgery.

In 1865 he married in the city of Havana, Miss Adela Shine, a native of the Island of Trinidad, still alive and a gifted woman who has faithfully and tenderly taken an active interest in all his endeavors. They have founded a family much esteemed in the social circles of Havana.

In 1881 he came to Washington representing the colonial government of Cuba at the International Sanitary Conference. He chose this occasion to make public for the first time his views on the *transmission of Yellow Fever by an intermediary agent.*

At the session of the Royal Academy of Sciences, in Havana, August 14th, 1881, he gave out his memorable theory of the transmission of Yellow Fever by the mosquito, reporting at that time a series of experiments that he had made on human beings, by which he claimed to prove the theory. In the communication he stated with all preciseness that for Yellow Fever to propagate it was necessary to have three conditions, viz: (1) The existence of a Yellow Fever patient into whose capillary vessels the mosquito is able to drive its sting and to impregnate it with virulent particles, at an appropriate stage of the disease. (2) That the life of the mosquito be spared after its bite on the patient until it has a chance of biting the person in whom the disease is to be reproduced. (3) The coincidence that some of the persons whom the same mosquito happens to bite thereafter shall be susceptible of contracting the disease.

Since that date (1881) he never ceased in his tenacious endeavor to prove the truth of these propositions. He studied very carefully the habits of the *Stegomyia* or *Culex* mosquito, Desv., as it was then called. He studied the anatomy of the insect and determined its manner of feeding and breeding under varying conditions of temperature and atmospheric pressure, also the geographic distribution of the mosquito, and by most ingenious experiments he proved the truth of his doctrine.

Upon these facts, discovered and analyzed by him, he explained with mathematical preciseness, as we do now, all the phenomena of the epidemiology of Yellow Fever.

These were the fundamental bases of the modern doctrine, but they made so little impression that it needed twenty years more, and the coincidence of the intervention of the United States in the war for the independence of Cuba, before the men of science returned to think of the matter.

The glory of Finlay is comparable with that of Jenner and Manson. Working independently, the latter in Amoy, the former in Havana, they laid the foundation of the doctrine of the transmission of diseases by blood-sucking insects. Their discoveries, as said before, do not in the least detract from the merit of their successors. Smith and Kilbourne, Grassi, Ross, Koch, Reed, Lazear, Carroll, Agramonte, Laveran, Bruce and others, as the work of these cannot lessen the glory of the initiators.

At the breaking out of the Spanish-American war, Dr. Finlay, who was then 65 years old, came to Washington to offer his services to the American Government, and insisted with his friend Dr. Sternberg, then Surgeon-General of the Army, to be sent to the field. He took part in the campaign around Santiago where he did not fail to speak, as he ever did when the opportunity offered, of the benefits that might be obtained if his theories were accepted.

On his return to Havana, in 1898, he brought his views to the attention of the Army Medical Officers, the government and the medical press in the United States. He wrote at that time a complete plan of campaign against Yellow Fever on the same lines which were subsequently followed with the brilliant results now familiar to all of us.

Those acquainted with the facts can never forget the impression made upon them by the manner of Dr. Finlay in receiving the various commissions that went to Cuba, taking advantage of the new order of things, to study tropical diseases. Full of generous enthusiasm he would explain his views and show his copious notes, records, experiments, apparatus, mosquitoes and would offer himself to assist in any kind of experiments that might be undertaken.

In 1900, the U. S. Army Medical Commission met with the same reception, and Dr. Finlay handed to them the mosquitoes with which they commenced the experiments that definitely proved the theories he had been maintaining for twenty years previously. With what generous interest he followed the experiments of this commission recognizing freely the incompleteness of his own procedures, admiring with an almost infantile candor the methods of technic, and the demonstrative results that were developing! His admiration extended from the work itself, with affectionate demonstrations to the men who were engaged in it,

the members of the commission and the men who submitted themselves to the experiments.

Upon the expiration of the first American intervention, in 1902, the Cuban government did justice to the illustrious compatriot, appointing him Chief Health Officer and President of the Superior Board of Health. Since this date, Dr. Finlay left the Island on several occasions to attend various meetings on sanitary matters in the United States. Wherever he went his charming personality attracted the most sincere demonstrations of affection and respect, a tribute at once to his genius and his great virtues. At the XXXI session of the American Public Health Association, held at Washington, in October 1903, he was elected President for the meeting which was successfully celebrated at Havana, in January of 1905.

Many are the honors which have been tendered to Dr. Finlay by institutions and publications at home and abroad. The medical profession of Havana, together with officers of the American Army, presided by General Wood, celebrated with a great banquet and the presentation of a statuette, symbolic of genius, the triumph of Dr. Finlay in 1900.

His Alma Mater, the Jefferson Medical College of Philadelphia, gave him the honorary title of LL. D. He was also elected honorary fellow of the College of Physicians of Philadelphia.

The Liverpool School of Tropical Medicine, in 1901, granted him the Mary Kingsley Medal for meritorious work in that branch of pathology, an honor that Finlay divides with such men as Manson and Ross. The Provisional Government of Cuba and the University of Havana joined in the solemnity of the presentation of the medal.

In 1908 the French Government made him an Officer of the Legion of Honor, the insignia being presented by the French Minister at the Academy of Sciences.

The Government of the second intervention, at the instigation of Col. J. R. Kean, U. S. A., and following a recommendation of the First Medical Congress of Cuba, granted him a life pension and ordered the publication of his papers, which have been issued in a big volume.

In 1911 he was elected a Corresponding Member of the French Academy of Medicine.

The scientific societies have always received his communications with respect even at the time when his ideas appeared to be absurd. And it could not well be otherwise, if we consider the character of the man: genial, kindly, jovial, modest, strong in the rectitude of his principles, which were founded on the most profound reverence for the truth and a devotional religious spirit.

Dr. Finlay's capacity for work was extraordinary. In the midst of the labors of active practice, and the frequent productions of papers on various medical subjects in which he generally proved himself to be ahead of his compatriots, he would find, for instance, time to decipher an old Latin manuscript, with the necessary gathering of data from historic, heraldic and philologic sources, to prove that the old Bible in which the manuscript appears was owned by the Emperor Charles V; or he would take up problems in the higher mathematics, chess and philology. In the midst of the harassing occupations of a great administrative office, and when he had passed his seventieth year, he mastered the complicated subject of immunity and the theories of Metchnikoff, Ehrlich, Buchner and others, presenting his own conception of the intricate problem.

Though Finlay's work is most varied in character, and though it bears throughout the stamp of great originality, it is all thrown in the shade by the great labor and genial conceptions that he devoted to the problems of Yellow Fever. This may be expressed in very few words: he discovered the fact that Yellow Fever is transmitted by the bite of one species of mosquito, and he invented a sure method for the extinction of the disease.

The members of the American Army Commission, Drs. Reed, Carroll, Agramonte and Lazear, and such men as Manson, Chaille, Boyce, Marchoux, Blanchard, Gorgas, Kean, General Wood and others, have given to Dr. Finlay the credit he deserves.

In his native country, Cuba, there has already been laid the cornerstone of the monument which will perpetuate the memory of this great investigator, indefatigable worker and illustrious benefactor.

"Great as our satisfaction must be, how much greater must have been that of the man, great as he was modest, who has made all this possible through a mental effort equaled by very few in the history of the human mind."

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THE USE OF THE X-RAY AS AN AID IN SURGICAL DIAGNOSIS.*

By FRED R. FAIRCHILD, M. D., Woodland.

Let me at once correct any misunderstanding that might be justified by the title of this paper. I do not pretend to be a specialist in Roentgenology. The necessity of doing this work myself has been imposed by reason of comparative isolation. The result has been several years of a very practical experience with the X-ray in its application to the various surgical conditions. Those conditions involving the use of the X-ray that belong absolutely to the field of the specialist are not discussed.

Also permit me to apologize in advance for considering some points that are perfectly well known and understood by all of you. The conditions under which most of you are working are similar to the conditions under which I am striving. Therefore, from my own experience and the experiences of the physicians in my community, I am able to understand your difficulties and to anticipate some of your shortcomings; shortcomings that are common to most of us. In urging that we do certain things more carefully and more consistently, I am only trying by reiteration to emphasize points that we all appreciate but too often fail to observe. With the idea of making the discussion practical, only those conditions commonly met with will be considered.

The most difficult problems in the field of medicine and surgery are met with in the department of diagnosis. Also, the most important step in the correction of any pathologic condition is an accurate understanding of the lesion that exists and more men in our profession are inclined to be indifferent to this fact than to any other. A good diagnostician must be a very patient man, for often the discovery of one obscure point may be the key to the entire problem.

The X-ray is but one of the many aids in diagnosis. In many cases it is the most important aid, but he who in using it foregoes the check of other tests will go astray. Emphasizing them, the importance of all other factors in arriving at conclusions, and urging the necessity of their employment, we will proceed with the consideration of the X-ray as an aid in the solution of various surgical problems.

To simplify the discussion we will consider our subject under the following heads:

I. The Skeleton.

a Fractures and dislocations.
b Abscesses in relation to bone.

II. The Thorax.

a Pleural effusions.
b Lung abscesses.
c Aneurisms.
d Tuberculosis.

III. The Gastro-Intestinal Tract.

a Esophageal strictures and diverticulae.
b Gastric cancer.
c Gastric and duodenal ulcer.
d Adhesions.
e Appendicitis.
f Incompetent ileo cecal valve.

IV. The Urinary Tract.

I. *The Skeleton.*

Of fractures and dislocations we may make rather prompt disposition. I only wish to emphasize the necessity, in justice to our patients and to ourselves, of making and filing for reference plates taken before and after reduction. It is a notorious fact that fractures are the excuse for more damage suits than are all other conditions combined. If we are right in our diagnosis and treatment the concrete records in the form of our plates will prove it.

Stereoscopic views of bone lesions are of far more value than are the ordinary plates made from two different diameters. By this method we have a picture with three dimensions. By careful study we are able to know exactly what manipulations will be necessary to effect reduction, and are able to say with a fair degree of assurance whether reduction will, indeed, be possible by any conservative measure. If we find that the open method is necessary, an exact knowledge of every fragment in relation to its fellows will go far toward enabling ns to effect our repair with a minimum of violence.

b. Abscesses in relation to bones.

Under this head there are two conditions deserving of special mention. The first, osteomyelitis, is usually attended by symptoms that should be unmistakable. Yet it is an unfortunate fact that this disease is often confused with articular rheumatism, simple arthritis, or tuberculosis of joints, and allowed to go on without proper treatment for days or weeks with consequent disastrous destruction of bone tissue. Where there is room for suspicion, a good radiograph (stereoscopic preferably) should be made, for thereby recognition of the trouble will be made easy, while delay in diagnosis is often fraught with awful consequences.

During the last year I have had three tibial osteomyelitic cases, two involving bone from one epiphysis to the other, one involving more than half the medulla. In no case was an early diagnosis made, and in no case was the effort made to discover the trouble by the aid of the X-ray. All were seen by physicians at a comparatively early stage.

In this connection, I would not fail to mention a disease that has in the past been considered entirely within the realm of dentistry, and so its correction still is, but its diagnosis will usually come from the wide awake physician. I refer to the blind or chronic abscess at the roots of the tooth. If the pain is severe, the patient may seek a dentist and find relief, but, unfortunately, the pain consequent to the condition is often slight. As a result the source of infection by the streptococcus viridans, with its far reaching results in

* Read before the Placer County Medical Society, September, 1915.

acute and chronic inflammation of the joints or serous cavities, may remain undiscovered and undisturbed. It is possible, and not difficult by specially prepared dental plates, to demonstrate the presence of an abscess at the root of a tooth, even though it may be no larger than a grain of wheat. I mention this mainly for the purpose of emphasis, for both dental and medical literature have been full of it for the past year, and the frequency of these abscesses as a source of infection is so positively proven that we must accept the facts, and accepting them, if we fail to be on our guard, we do our patients grievous wrong. Every case of rheumatism, arthritis, endocarditis, myositis or pericarditis should excite our suspicion. There is a source of infection somewhere in the anatomy. If it is not otherwise demonstrable, suspect the teeth and free them from suspicion or fasten the blame on them by a clear dental film.

II. *The Thorax.*

Not so long ago diagnosis of obscure conditions within the thorax and particularly the mediastinum, was a test for the most skilful. For that matter enough obscurity still exists, but the X-ray has done much to simplify the difficulties. We still depend largely on the old methods of examination, palpation, auscultation and percussion, but, who among us, even in so simple a matter as a pleural effusion, has not been puzzled as between this condition and a pulmonary abscess, or an area of consolidation. A good radiograph (again preferably stereoscopic) will add enough to the clinical findings to decide the question, for the dense area as shown in the plates have very different locations and contours according as the accumulation is in the lung tissue or the pleural cavity.

In very early tubercular conditions I question whether the plate will do more than help to confirm a suspicion, unless it so happens that enlarged mediastinal glands develop as the first evidence of the tubercular involvement. Preliminary examination by the screen will aid greatly in correctly interpreting the plates. I pass this with a word, for it is only exceptionally that this may be considered a surgical condition.

The positive diagnosis of a thoracic aneurism, until it has assumed a considerable size, is, for the average physician unaided by the X-ray, well nigh impossible. By the aid of the ray the diagnosis should not be difficult, for the shadow plainly discloses the pulsating tumor, and the following stereoscopic plates, so accurtely place the mass as to leave us sure of our ground.

III. *The Gastro-Intestinal Tract.*

Next to the examination of bone lesions, the X-ray offers us the greatest assistance in determining the character of pathologic conditions along the alimentary tract. Strictures of the esophagus are at once disclosed, the examinations being made by the screen with the patient standing during the attempt to swallow the bismuth-buttermilk preparation. An esophageal diverticulum may, by the same method, be accurately located and studied, and both these conditions differentiated from mediastinal tumors pressing against the gullet and causing almost identical symptoms.

Next, and most important, we wish to consider the relation of the X-ray to the diagnosis of lesions of the stomach and bowels. Of all of the aids in classifying abnormal conditions, affecting directly these organs, the X-ray is, in my opinion, of far the most value, and, strange as it may seem, it is, by the majority of physicians, the method least appreciated, or, at any rate, least used. The reason is perhaps not far to seek. The necessary equipment is expensive. It can be successfully used only after an expenditure of much time in study, for both the technic and the interpretation are difficult. These facts place the personal application of the method beyond the reach of the average busy doctor. If one has not his own apparatus it necessitates sending the patient to some one at a distance who is equipped to do the work, and entails a considerable expense to the patient. But do the results justify the expense and trouble? In my experience I should say, absolutely yes. In the vast majority of cases of so-called chronic dyspepsia there exists a demonstrable lesion. The physician who continues to treat a chronic dyspepsia, and does not employ every means in his power to determine the cause of the dyspepsia is wrong. The primary symptom of gastric cancer, is chronic dyspepsia. Wait until you can make your diagnosis from physical signs, and you have waited too long. The belated diagnosis will do the patient little good. Make the diagnosis early, and the chance of operative cure is, according to such an authority as Wm. Mayo, even better than the chance for operative cure in early cancer of the breast.

In the diagnosis of ulcer of the stomach or duodenum the X-ray is again of the greatest value. The early active lesion is usually diagnosed without the aid of the ray, but the result of the forgotten or unrecognized ulcer is told more graphically by the screen and the radiograph than by any other sign. How often do we have patients coming with a history of a feeling of continuing fullness after eating, followed by a sour stomach, very late vomiting, and, perhaps, many of the symptoms of autointoxication. Would it not be of the greatest possible aid to know the exact position, size, and shape of such a patient's stomach? Is it not necessary to know whether that stomach is failing to empty because of a pyloric stenosis, because of spasm of the pyloric sphincter, because of adhesions holding the outlet of the stomach in an abnormal position, or whether, perhaps, it may be due to an atony and prolapse of the viscus? Without this knowledge, treatment, at best, is based on guess work. With this knowledge, we are in a position to give intelligent advice. The bismuth meal, followed by a careful screen examination and good Roentgenograms, will give us just this information. Can the physician, or the patient afford to be without it?

What of adhesions, either affecting the stomach or the bowels? Adhesions do perform strange freaks, and we may, or may not, be able to find an excuse for their existence. But they do exist, and are often the source of great distress. Except by the aid of the X-ray we can no more than guess at their presence, and when the guess is

made, it will usually be wrong. As an example, a slide that I will show later, will best illustrate the effect of an omental adhesion in distorting and interfering with the function of the stomach. Except for the information given by the X-ray the condition would not then have been discovered.

For want of time, I can no more than mention the importance of disturbances by adhesions that come about the terminal ilium and the cecum. An appendicitis long forgotten, may have left behind its trade mark in adhesions, with the result that the patient suffers constantly from iliac stasis (the most unfortunate form of stasis) and a chronic condition of autointoxication. Perhaps the complaint is of gastric dyspepsia and we can find no cause. Nor must we forget that very frequently overlooked condition, chronic gastric indigestion from pylorospasm, a reflex condition with the source of irritation elsewhere, and very frequently in or about the appendix. If the conditions exist, correct X-ray technic will demonstrate them and the lesion at best may be only suspected otherwise.

In discussing lesions along the alimentary tract, we must mention incompetency of the ileo-cecal valve. The symptoms are much like those from an intestinal stasis, and very often an inoffending appendix is sacrificed, and the offending valve overlooked. No condition is more beautifully demonstrated by the screen or X-ray plate. If after all bismuth has entered the cecum, one finds on examination two or three hours later that the lower ileum is again filled, the evidence is conclusive, and the technic of correction quite as easy as a simple appendectomy, and the results far more satisfactory.

IV. *The Urinary Tract.*

Finally, for the purpose of emphasis, let me remind you of the very great assistance that good Roentgenograms may be in clearing up problems associated with the urinary tract. By reason of the density of kidney and bladder stones, it is quite possible accurately to locate them on the plate. From my own experience, I feel sure that very many of the cases diagnosed as chronic cystitis have as a cause, a stone in the pelvis of the kidney or in the urinary bladder. Being undiscovered they act as a constant irritant and the patient rapidly progresses from a condition of discomfort to one of disability.

We have no right to make a diagnosis of chronic cystitis unless we are prepared to go further and search for the cause.

And so in conclusion, I would again urge for each of us more earnestness in diagnosis. Most of us are busy and often so situated that access to the best aids is difficult. We find recourse in our old and indefinite friends rheumatism, dyspepsia, biliousness, etc. In other days they were crowned with the dignity of diseases. As a matter of fact they are but symptoms and our duty to our patient can not be discharged until we can say to him, "You have rheumatism and the infection comes from such and such a source" or, "You have an indigestion caused by this or that lesion." And, since I believe that this positive information comes most frequently from findings by aid of the Roentgen ray, I urge that we overcome the obstacles to its use, for very often it tells the story of coming trouble more early than our other tests and permits us to act in time whereas delay would render us helpless.

WHICH IS THE PREFERABLE OPERATION, PERINEAL OR SUPRAPUBIC PROSTATECTOMY?*

By CHARLES REES HARRY, M. D., F. A. C. S.,
Stockton.

The first operation for relief from the obstruction produced by an enlarged prostate was tapping the bladder above the pubis and passing a catheter through the opening to make a fistula which would provide proper drainage.

In 1834 Guthrie, and in 1837 Mercier devised instruments for cutting the obstructing bar at the neck of the bladder in a manner similar to the method of cutting a stricture of the urethra by an internal urethrotomy. In 1873 Botinni devised his galvano-caustic incision for the same purpose. Removal of the obstructing parts of the enlarged prostate through a suprapubic wound was recommended by McGill in 1887. Partial prostatectomy by the perineal route was first performed for malignant disease in 1866 but was later practiced for the removal of benign growths. In 1881 Harrison performed complete prostatectomy through the perineum.

Freyer in 1901 brought before the profession his complete removal of the prostate through a suprapubic wound. From 1895 to 1905 most operations removed the entire prostate through the perineum, but since the latter date a great many operators have preferred the suprapubic route.

Some authorities, Proust, Albarran, Young, Goodfellow and Parker Syms, advocate performing all prostatectomies through the perineal route, while others, Freyer and Squiers, advise the suprapubic method. Still others, Fuller, Deaver and Judd, practice both methods.

In a series of 463 cases operated on at St. Mary's Hospital, Rochester, 323 were perineal and 140 suprapubic operations. It is the object of this paper to bring out a thorough discussion of the subject to determine if it is not a better way to have the method of operating depend on the pathological condition present in the same manner as one would do in cases of hysterrhectomy, in some operations choosing the vaginal, while in others the abdominal route.

There are two principal varieties of benign prostatic enlargement, glandular and fibrous. The first is a true adenoma with very little fibrous tissue present. This is the most common form. In a series of 100 cases operated on by Squier, 62 cases were of this variety. The prostate grows to a large size, the bladder is frequently dilated and through a perineal incision, even with a retractor in the bladder to pull down the tumor, it is frequently impossible to reach high enough to enucleate the upper part of the lateral lobes.

* Read before the Surgical Section of the Pan-American Medical Congress, June 21, 1915.

In this form if the prostate is so much enlarged that one cannot feel the upper border through the rectum, it is better to do a suprapubic operation. In case of "ball valve" outgrowth or pedunculated median lobe, it is also better to remove it through a suprapubic wound. In the second variety, there may be some increase of glandular tissue, but the enlargement is mainly due to an overgrowth of fibrous tissue, and is very frequently firmly adherent to the capsule, probably as the result of inflammatory changes. In some cases there is merely a fibrous enlargement of the middle lobe, raising the inlet of the bladder or a ring of fibrous tissue, Goodfellow's so-called "doughnut hypertrophy," compressing the neck of the bladder and interfering greatly with the evacuation of the urine and still by a physical examination through the rectum, not much enlargement is found. In other cases the enlargement of the lateral lobes progresses toward the rectum. These forms are very difficult and in some cases impossible to remove through the bladder and therefore a perineal operation is preferable. There are intermediate forms with both an increase of glandular and fibrous tissue, but one can make a general rule that if the glandular tissue predominates, the mass will be more apt to encroach in the bladder, and it will be easier to operate from above, while if the fibrous tissue is in excess, it will be much easier to enucleate from below through the perineum.

The prostatic urethra is frequently removed in both operations, but this usually makes no difference in the functional result. The neck of the bladder is not so liable to be injured by the suprapubic method and therefore there is less danger of incontinence of urine afterward. Drainage of the bladder is better through a suprapubic wound, and this wound closes more rapidly than the wound left after an extensive perineal operation. On the other hand the suprapubic operation is longer, there is more shock and more danger of pulmonary complications.

The danger from sepsis however is greater following perineal operations. The mortality is higher in suprapubic cases. In 243 cases of suprapubic prostatectomy collected by Watson, the mortality was 11.5%, whereas in 530 perineal cases, the mortality was only 6.2%. The causes of death were sepsis, shock, uremia or some pulmonary complication. The end results according to Watson's tables were suprapubic 66% cured, 90% good results; perineal, 60% cured, 88% good results.

Complications such as orchitis, incontinence of urine or permanent fistula, 6% in suprapubic cases, while in perineal cases the percentage was 7.2. Squier says that post operative incontinence is an unknown accident, following a properly performed suprapubic enucleation of the prostate.

Although the mortality is slightly higher, the end results are more favorable in suprapubic cases. The choice of operation should be the suprapubic for all cases where the prostate can be successfully removed from above, and where the patient will be able to withstand the shock of a longer operation, with increased time in bed; but in cases of small fibrous prostate, where the obstruction is produced principally by an enlarged middle lobe or where the lateral lobes project toward the rectum, the perineal route should be the preferable one.

TWILIGHT SLEEP.*

By MILLICENT COSGRAVE, M.D., San Francisco.

Probably no subject interesting to physicians has received so much attention from the laity during the past twelve months as twilight sleep. It has cast into the shadow vivisection, compulsory vaccination, and all other bogies of the lay press.

The laity cannot understand the prejudice of physicians against it, and many lay it to the fact that it is "made in Germany"; others, that it has been so widely advertised in magazines and by physicians who wished to profit by lay advertising that the more ethical members of the profession refused to try it.

Of course, our American experience with the Friedman tuberculosis "cure" has taught us to fight shy of the advertising physician, no matter how high his standing in his own country. I remember when Professor Adolph Lorenz was here in 1902, that his attitude towards reporters and his desire to facilitate their opportunities in acquiring news was widely and more or less justly deplored by the profession at large.

Recently during my visit in New York, the New York *Times* got hold of a new serum cure for cancer that is being tried by some of the professors of experimental medicine in Cornell University, and wrote it up in a most sensational manner. The men in question threatened reprisal and were told by the *Times* people to go ahead, that they, *"The Times,"* would gladly pay the costs.

Twilight sleep, it seems to me deserves better treatment at our hands. One can hardly say it is in its experimental stage when one considers that Kroenig and Gauss have been using this method in Freiburg for the past ten years, have delivered 3000 women successfully, and published reports of their work that prove it to be humane, satisfactory, and safe. Kroenig in the *Journal of Surgery, Gynecology and Obstetrics,* May 1914, makes a plea for the use of Dämmerschlaf, especially in highstrung, modern nervous women, and states: "The patient has a perception of pain, but not an apperception. She still reacts to labor pains with an expression of pain, but afterwards has no recollection of the pain experienced." "We believe," he continues, "on a basis of our experience in which no detrimental results ever occurred for the mothers, that we are safe in recommending this drug (scopolamin morphine) as not dangerous for mothers. In some cases the pains may be slightly reduced, but our calculations show that the average duration of birth has increased one half-hour, a negligible amount."

Dr. Knipe, until recently adjunct professor of Obstetrics at the Postgraduate Hospital, New York, and at present attendant obstetrician at the Gouver-

* Read before the Cooper Clinical Society, May 3, 1915.

neur Hospital, in his article on "Twilight Sleep," December 1914, *American Journal of Obstetrics,* says in part: "The technic of twilight sleep is rendered difficult by the varying susceptibility of different people to scopolamine, and because of the necessity of continually testing the varying consciousness of the patient. The basis of successful twilight sleep is the proper use of the memory tests. These tests must be uninterrupted throughout labor, and are the best and *only* method of gaging the consciousness of the patient." Knipe also states that morphine must be used but once and then only in 1/8 of a grain dose. He says: "To properly carry out twilight sleep requires the use of a special chart in which the time, the number of injections, symptoms of the patient, memory tests, the fetal heart, and the mother's pulse are noted." "The production of twilight sleep requires not only a technical knowledge of the use of scopolamin and morphine, but also good obstetrical judgment and an adequate understanding of obstetrical forces and conditions. It is for this reason that the method is best used by the obstetrician. It is easier to train a good obstetrician in the use of scopolamin and morphine than it is to make a good obstetrician out of one who may know of the induction of twilight sleep."

I think personally that many of the prejudiced expressions we have heard, too, are based on lack of obstetrical skill on the part of those handling the drug. I think we must all admit that many cases of still-birth are due to a lack of experience on the part of the obstetrician, especially in former years, when a practical knowledge of obstetrics was largely a matter of good luck.

The danger to the child. That the injection of scopolamin subcutaneously into the mother is absorbed into the circulation of the child is to be expected, and can be easily proved by the presence of the drug in the urine of the child at birth. Holzbach has proved the presence of the drug in the mother's milk and in the urine of the child. In the child the drug is quickly excreted, generally in fifteen minutes after birth, if small doses have been used. The effect of the drug in endangering the life of the child by lengthening labor which averages one hour more in primipara and one-half hour in multipara is of little moment when the drug is properly used.

Salzberger in Freiburg investigated the matter of dangers to the child, and his investigations proved that when properly given, scopolamin had no dangerous effects on the life, health, and development of the child. Gauss and Kroenig also state that they have followed the history of some of their babies, and report that there was no difference in the mortality of these babies nor in their morbidity than among those whose mothers had not received this treatment.

In *Modern Hospital,* October 1914, Knipe dwells at length on the necessity of quiet in the induction of twilight sleep and suggests that maternity wards in hospitals be furnished with padded rooms, silenced floors, etc. Whether this makes a great difference or not, I am not prepared to say. In the four cases I witnessed in the maternity wards of the Long Island College Hospital, there were several women in labor at the same time, no especial effort was made to induce quiet; of course the women were not in the same room, but you could hear their cries. Yet the twilight sleep patients did not appear to be disturbed in the least.

Polak, professor of Obstetrics and Gynecology in the Long Island College Hospital, in an article in the *New York Journal,* February 1915, states that he is convinced that there is no reason why Dämmerschlaf should not be caused in all women who show the physical signs of active labor, provided that the woman be under *continuous intelligent observation.* He continues: "It is distinctly a first stage procedure and should not be begun if the labor be far advanced; if such be the case the doses required will necessarily be greater, the danger to the patient obvious." . . . "This analgesia is particularly indicated in nervous women of the physically unfit type in their first labors," says Polak. For it is in this type of woman that labor has most often in ordinary practice to be artificially terminated, owing to the physical exhaustion so common at the end of the first stage of labor before cervical dilatation is complete, or in the second stage when no more force can be brought upon the uterus by the abdominal muscles; and it is with this class that scopolamin morphine will give the best results, because by its use we are able to attain full dilatation of the cervix by the operation of the physiological factors, i. e., bag of waters, and force of the uterine contractions before the patient begins to show signs of physical fatigue.

McPherson and Harrod, attending surgeons in the New York Lying-In Hospital in the *Bulletin* of that hospital, February 1915, report the results in 100 cases in which they used scopolamin morphine, and 100 untreated cases. They secured complete amnesia in 66 women, partial amnesia, hazy recollection with distinct alleviation of the patient's suffering in 10. Of the remaining, 20 did not respond to the drug at all, and four were too far advanced in labor to derive any benefit. It is noteworthy to remark that practically all of the successful cases were those in which the treatment was started three to seven hours before the termination of labor. "The percentage of successful cases is increasing," they report, "as we become more familiar with the treatment."

"The disadvantages claimed by those opposing the treatment are chiefly two,—fetal asphyxia and postpartum hemorrhage. It is evident that these are the result of faulty technic.

"In our cases the tendency to hemorrhage seemed less rather than greater. As to the fetal asphyxia, in the 100 cases delivered without scopolamin, there were seven instances of asphyxia at birth, two requiring tubs and artificial respiration for twenty minutes. With the scopolamin babies, on the other hand, the majority cried at once without any evidence of being under a drug; eight were moderately apnœic, but quickly responded, and two required artificial respiration for 15 or 20 minutes. This asphyxia occurred in the cases where there was a delay of the head on the perineum. The average

duration was 16 hours in the untreated primipara, against 18 hours in the 100 treated.

Brodhead in the February *Post Graduate Magazine* reports that his personal experience is limited to 71 cases in which he has used the Siegel or routine method. His experience has made him conclude that twilight sleep is still in its experimental stage. But the Siegel method was used only on the fourth class patients in Freiburg and is considered there to be in its experimental stage. None of the Gauss-Kroenig records are based upon it.

In a discussion following Dr. Knipe's paper in the N. Y. Academy of Medicine, Dr. Abraham Rongy said that in a series of 230 cases, 80 of the children suffered from slight oligopnea; the first stage of labor was shortened, the second prolonged; as far as hemorrhage was concerned there did not seem to be any appreciable effect; amnesia was obtained in 80% of the cases.

Dr. Harrod said "that when the Gauss-Kroenig method was used, the general effect on labor was a rather more rapid dilatation of the cervix than usual, followed in a certain number of cases by delay on the perineum. This delay, if the fetal heart were watched, was of distinct benefit to the mother, resulting in fewer perineal lacerations. Getting the patient under the drug must be gradual with the minimal dose to produce the effect. That any harm that came to the child was due to bad obstetrics, not to the scopolamin treatment. Even better obstetrical knowledge and judgment than usual are necessary, and abdominal and vaginal examinations must be carried on as in any labor."

Dr. George Shears, N. Y. Polyclinic, stated that in the cases which had come under his notice the effect on the mother was wonderful; there was no hemorrhage, no relaxation, the mothers recovered quickly. But the various factors involved were of danger to the baby, and that to state that the baby was better under the several factors involved was to put too much strain on the imagination, and after all the chief object in pregnancy is the baby.

Dr. Knipe and Dr. McPherson do not believe that labor is prolonged, for in their series of cases the total duration of labor was reduced. They say that if those who said that mothers did not gain much and babies were endangered, they should hear the women who had received it enthuse over it.

I must say I had similar experiences. The "Mrs. Boyd" who has caused much of the prejudice against twilight sleep in her efforts to pass her knowledge on, and who wrote the first magazine articles, started a society for the propagation of twilight sleep, and has more recently written a book on it. I met this little woman and her description of her experience of childbirth under Gauss and Kroenig in Freiburg sounded like a marvelous fairy tale, and would have impressed the most skeptical.

Dr. Cragin is perhaps one of the strongest antagonists to twilight sleep. He said there were possibilities of good in the method, but that the practice of twilight sleep was not so easy a matter as described in the magazines, and if anybody thought that the method was possible by the general practitioner with small experience, he was mistaken. He found that some of the patients were decidedly excitable and tried to get out of bed, and that prevented asepsis and increased the danger of infection.

The question of the safety and desirability of the use of "Dämmerschlaf" seems to me to be:

1. That the man or woman using it must be an experienced and careful obstetrician.
2. That it must be given in a hospital or in a private home where a whole hospital force may be employed.
3. That the obstetrician be within call.
4. That the proper conditions be observed and the Gauss-Kroenig technic used.

The *technic of Siegel,* which was what De Lee of Chicago saw when he visited Freiburg, and which is the method chiefly used in America, is one of the reasons for the failure of twilight sleep in many instances. In this method every patient is treated similarly and the doses are given in a routine fashion; too much narcophen is used and when the second stage is prolonged, frequently pituitrin is also used, which is another factor which may result in harm to the baby.

Dr. Seantt, obstetrician at the University of Minnesota, quotes twelve cases and concludes that twilight sleep should not be administered at random, that the dose of hyoscin and morphine should be given cautiously and in minimal amounts, that the subject under its influence should be closely watched by an experienced attendant, and lastly that the other advantages should be employed to their fullest extent.

Dr. De Lee of Chicago states in *Modern Hospital* that he observed ten or twelve cases in the Frauenklinik in Freiburg in the service of Dr. Siegel. In these there were four forceps cases and one craniotomy. He says the proper conduct and treatment requires a large force of physicians and nurses. The fetal heart sounds must be watched constantly and the patient must not be left alone, especially if delirious. "Indeed," he writes, "I had to admit that when the method worked well it was ideal. In a well-equipped maternity hospital in the hands of an experienced obstetrician, these drugs may be administered with a certain degree of safety, but its general use throughout the country would result in an appalling infant mortality and an enormous maternal mortality and morbidity."

In the five cases I saw in the Long Island College Hospital the Gauss-Kroenig method was the one used. The patients were placed in a semi-darkened room and no conversation was indulged in. The first dose was administered when there were regular forceful, even painful contractions of the uterus, the pains coming about five minutes apart. It consisted of an injection of 1/150 of gr. scopolamin and 1/68 of narcophen. Three-quarters of an hour later the patient was shown some object with which the test was made, and then thirty minutes later was shown the same object. If at this time the patient remembered having seen the object before, which is usually the case, a second

injection was given, consisting of 1/150 of scopolamin but no narcophen. (If there is amnesia after the first dose, no scopolamin is given until further tests show a return of memory.) About two hours later, the memory tests having been used every thirty minutes, and the condition of the pulse, fetal heart, and pupil noted, a third dose consisting of 1/400 of scopolamin was given, and as a rule five doses were the usual amount used. The first patient (a primipara) was very quiet during the whole course of labor. After the second dose her face was flushed and she complained of dryness and asked for water. That she felt her pains was evident, for she would squirm, bear down and throw herself from side to side while they lasted. With her the second stage was not prolonged, and the head came very rapidly and forcefully on the perineum. Dr. Polak, in order to avoid a laceration, cut cleanly through the middle of the perineal body and delivered the baby, which was neither blue nor apnœic, but cried lustily immediately. After the delivery of the placenta the perineum was sewed up. The patient had no recollection of the birth the next day.

The second case was in the Brooklyn City Hospital, and the room and setting were admirably adapted for the induction of twilight sleep. The room was painted in a deep shade of green, the lamp shaded, and at the head of the bed on one side sat the doctor, on the other the nurse. She was in active labor, the pains coming regularly. Every twenty minutes her memory was tested and five doses of the drug in all were given. She slept between the pains, and during many of them seemed to rouse slightly and groaned a little. The baby cried instantly and required no treatment and was not blue.

The third case was a multipara, a very noisy woman. She came to the Long Island College Hospital in active labor and was more advanced than the former cases. She did not respond so readily, but shouted and screamed during her pains, talked and mumbled between them. Her childbirth to the onlooker was very disturbing, for she seemed in agony, but next day claimed she had not remembered anything.

The fourth case (a primipara) age 20, a strong husky girl, came into the hospital screaming and most noisy. For one-half hour after her first dose she remained noisy, but after that became quiet and slept between her pains. In the last stages she was rather delirious and difficult to handle, and was delivered with forceps, the cord being tied around the child's neck twice. This baby did not cry immediately and was dipped in hot and cold water quite unnecessarily, I thought, for in a few moments, as soon in fact as he was put in the water he shrieked and kept it up.

The fifth case was also a primipara, a case that would make you want to use twilight sleep. It was like the second and third case where everything was ideal. The patient responded to the drugs. She was sufficiently intelligent to co-operate and the baby was a fine, strong, husky child who showed no evidence of scopolamin.

In all these cases, the physician was present during the entire time, as were the nurses. Everything was quiet in the room and an atmosphere of peacefulness prevailed, so different from the ordinary case. These women were all peasants and chiefly foreigners, and when I think of them and remember some of my experiences with foreigners of a similar class here, I rejoice that such a drug may be used on the very poor in hospitals and on the very rich wherever they may be. The great middle class will not be benefited by it unless they come to hospitals, for they will not be able to afford to pay for the physician's time. In one or two of the really old hospitals in New York where they are using the scopolamin treatment in childbirth, patients are paying $70 and $80 for small dark rooms with the accompanying discomforts and are not complaining.

That women feel the pain is evident from their expression at that time, but they use their forces better, sleep between pains, bear down fearlessly, help themselves, and remain amiable and pleasant throughout. I do not believe there is any possibility of using the treatment outside of a hospital, but I do think that in the case of the modern, nervous woman who shrinks from maternity, there will be a lessening of race suicide. I do not feel that it is a panacea for all the troubles of childbearing, but I do feel that we should give it a fair trial using the Gauss-Kroenig technic, and in the most experienced hands of an obstetrician of good judgment; not one who will make up his mind beforehand, and from his conclusions on experience based on 10 or 12 cases observed in a foreign clinic or in the hands of an unskilled obstetrician.

I quite agree with the physicians who, if they are convinced that scopolamin increases the number of stillbirths, refuse to use it. For our statistics show a very large percentage. In New York in 1912 the *average per thousand* was 46, in San Francisco 44.2. In 1906 in New York per 1000, 56. In foreign countries the smallest percentage of stillbirths was in Austria-Hungary. There the greatest number of stillbirths were among illegitimate children.

In Sweden,	28	legitimate,	87	illegitimate.
In Prussia,	39	"	54	"
In Belgium,	43	"	58	"
In France,	42	"	78	"
In Austria,	24	"	38	"
In Hungary,	14	"	30	"

1916—STATE SOCIETY—FRESNO.

The Council of the State Society, at a meeting held September 11th, discussed the various places which had extended invitations for the Annual Meeting of 1916. After carefully considering the various points in relation to the best interest of the Society and the profession as a whole, a ballot was taken which resulted in the selection of Fresno. The meeting will be held in the third week of April, 1916, at Fresno, and we are assured of ample and satisfactory hotel accommodations. It goes without saying that a royal welcome will be extended to all our members by the profession of Fresno.

Further information will be published later on in the Journal.

GLANDULAR POLYPUS OF THE COLON.*

By GEORGE H. AIKEN, M. D., Fresno.

Mrs. T., age 21, height 5 feet 3 inches, weight 110 pounds; nationality, Armenian. Birthplace, California.

Family History: Mother and one sister living and enjoying good health. Father died at age of 45 years, from what was considered papilloma of the bowels. Autopsy was made by Dr. R. S. Anthony, then living in Fresno, and he gives his recollections in the matter from a letter recently received. Speaking of the autopsy he states: "We found the entire colon and a portion of the small intestines involved in these peculiar papillomatous growths. One peculiar feature noted was, that the mucous surface itself did not appear abnormal, simply the pediculated cauliflower growths of various sizes and lengths. It is stated by the family that this man suffered more or less from diarrhea since early infancy. He was an invalid some three years prior to his death."

Personal History: Mrs. T. was always frail from infancy, anemic, with sallow complexion. Was married in 1911. Had quite a severe attack of dysentery same year. During the entire time of pregnancy, latter part of 1911, she suffered from diarrhea, which was only partially controlled with great difficulty. After her confinement in July, 1912, she regained flesh and strength slowly, and continued in fairly good health, yet had occasional attacks of diarrhea. In 1913, she spent several weeks on the coast and gained ten pounds. In 1914 while visiting in Berkeley, she consulted Dr. Martin Molony of San Francisco, who discovered some polypoid growths in the rectum. She later was referred to Dr. Emile Schmoll of San Francisco, who after a thorough examination returned the following report:

Diagnosis: Glandular Polypus of the rectum, with suspicion of malignancy. Red blood cells 2,840,000, leukocytes 11,200, hemoglobin 40 per cent. I would here state that she had been passing some blood and mucus with nearly every action of the bowels for some weeks, and suffered more or less pain in the left side of the abdomen.

Dr. Schmoll advised iron, quinine, strychnine, and arsenic internally, and rectal instillations of solution of calcium lactate daily for control of hemorrhage. Having had favorable results in seemingly like cases, I added petroleum emulsion, one tablespoonful in half glass water night and morning. No polyps appeared in her passage for one week, when she commenced to discharge large numbers of them, ranging in size from a grain of wheat to a small filbert. During the following month fully two ounces passed per rectum, she gained in flesh and strength, and color improved. There was much less pain over the left side, actions from bowels less frequent, better consistency, far less mucus, and the red blood cells had increased to 4,000,000, hemoglobin from 40 to 80 per cent. During the month of December, there was nearly three weeks during which time no polyps passed, and there was general improvement, with exception of some blood continued in her actions. I will state that the calcium lactate accomplished little good, rather added to her discomfort and all rectal injections were discarded. During the month of January her condition remained about stationary, with several actions each day, little mucus but more often blood.

I would state that Dr. J. L. Maupin came into the case in November and after careful examination we were all agreed that the growths were confined to the transverse and descending colon. During the month of February she lost ground, suffered much pain in the left side, blood increased in the actions, and was losing flesh and strength.

In the event of no improvement Dr. Schmoll had advised a Lane operation, thus removing all irritation from the colon, and anticipating atrophy of the morbid growths therefrom. In view of so little gain and the patient anxious for relief, operation was advised to which the patient readily consented. On March 18th, Dr. J. L. Maupin assisted by Dr. Craycroft and myself short circuited the bowel, transposing the lower end of the ileum to the descending colon near the sigmoid flexure, making the attachment as low as possible.

None of the morbid growths were found in the small intestine, and to all appearances the mucus membrane was perfectly normal. The upper end of the severed colon was partially filled with the polypoid growths, in the main pediculated variable in both size and length. By the feel, I should say they were in the main bunched and the bowel content was filled to fully one-fourth. As was found in the case of the father, and reported by Dr. Anthony, the interspaces between the growths of the mucus membrane were normal.

The patient rallied from the operation without serious shock, and made an uninterrupted recovery, returning to her home at the end of two weeks. There has been a steady gain in both weight and strength since the operation, but bowel movements were too frequent for some weeks. Suffers very much less from pain in the left side, less blood in the actions, and only an occasional discharge of a polypoid growth from the colon above the attachment.

An examinataion per rectum with proctoscope as late as June 15th disclosed an improved condition. No new growths were found and those present soon after the operation had disappeared. What the future holds in store for this patient no one can foretell.

We may very naturally speculate on the following points:

First, how much can we place to the credit of heredity?

Second, are these growths found in the large bowel likely to extend and involve the small bowel, as in the case of the father?

Third, is there any known rational treatment for this condition?

Not in a single text book have I found a clear well defined clinical history of a condiiton, similar to the case here narrated, or that of the father. While there is nothing out of the ordinary in the pathology of these growths, the extent of the bowel involved is certainly very rare and unique.

Virchow's very lucid exposition of all morbid growths in his work on "Cellular Pathology," is perhaps as satisfactory as any. You all know that he contends the starting point of all new formations, whether benign or malignant, is irritation followed by the splitting up and proliferation of cells. When, if ever, a growth foreign to the tissues is to assume dangerous proportions, or become malignant, this eminent author makes no claim. In this case as with many other new formations, together with heredity, there is a marked tendency to malignancy. With the daughter as well as the father, we have the long continued irritation from diarrhea, and as a consequence proliferation and hypertrophy of the mucous tubular follicles of the bowel.

Billroth in his "Surgical Pathology" has this to say, "I cannot consider the proof as at all con-

* Read before the Fresno County Medical Society, September 7, 1915.

vincing, but remain of the opinion, that there is just as much a specific predisposition to the development of tumors, as there is to chronic inflammations with proliferation of the inflammatory new formations."

PATRONIZE THOSE

WHO

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YOUR

JOURNAL

BOOK REVIEWS

Care and Feeding of the Infant: Practical Advice for Mothers and Nurses. By George D. Lyman, A. B., M. D. With an introduction by Ray Lyman Wilbur, M. D., Dean of College of Medicine, Leland Stanford Jr. University. Paul Elder & Company, San Francisco, 1915.

Doctor Lyman's book, "Infant Feeding," with a very apt introduction by Doctor Wilbur, is produced in Elder's inimitable style. The book, as Doctor Lyman says, is the result of notes to the nurses and has many very valuable suggestions both for nurses and mothers. His suggestions to mothers on feeding and his dietaries and recipes are very well worked out and should be of considerable advantage to mothers of young babies in the preparation of their food. The various sections are well arranged and the material merits the careful consideration of every mother and every nurse working with children. We recommend the book most highly. W. P. L.

The Care of the Baby. By J. P. Crozer Griffith, M. D., Professor of Diseases of Children in the University of Pennsylvania. Sixth edition thoroughly revised. 12mo. of 463 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net.

This book contains much useful information to a mother in the care of her baby through the first few years. I recommend the chapters on the well baby, but not those on the sick baby unless, as the author has expressed in his preface, the mother is unable to get medical advice. The information that all mothers need, unless they have had a nurse's training, is that appertaining to the care and management of a well baby. C. B. M.

Collected Papers of the Mayo Clinic, Rochester, Minn. Edited by Mrs. M. H. Mellish. Vol. VI. 1914. W. B. Saunders, Philadelphia and London, Publishers. 1915.

These yearly publications always mark another epoch in American surgery. They represent the advance of surgical efficiency and give us the result of honest straightforward statistics. The present collection of papers shows increased productions from the associated staff of the Mayo Clinic and less of the work of its original founders. Research and orthopedics assume more prominence yearly. The illustrations have always been good and improve with each issue. American medicine owes the Mayos a debt of gratitude. S. T. P.

Fractures and Dislocations,—Diagnosis and Treatment. By Miller E. Preston, A.B., M.D. With a chapter on Rontgenology by H. G. Stover, M.D. 860 illustrations. Published by C. V. Mosby Company, St. Louis, 1915.

This is a very practical book, full of pictures; —860 illustrations we are told. It is typically American in its neglect of lengthy discussions of pathology, though the surgical anatomy is well considered. Another good feature is the photographs of very recent dislocations and fractures exhibiting the characteristic deformities and postures of the patient. Many new ideas on treatment are brought forward and Albee's work on inlay bone grafts is given in detail. In spite of the author's fatal habit of splitting his infinitives and other blemishes apparent only to the hypercritical, it is altogether a very commendable work. S. T. P.

The Prevention and Treatment of Infections. By Oliver T. Osborne, A.M., M.D., New Haven, Conn. Published by Journal of the American Medical Association, Chicago, 1915.

Recently in the Journal of the American Medical Association there appeared a series of articles entitled "Prevention Greater Than Cure." In this series were many valuable papers that have no doubt found their way into many a physician's scrap-book. They now appear in print gathered into a handy little volume under the title as above. For those who are interested in hygiene, especially social hygiene as it affects the health of the growing child, this book is extremely valuable. Incidentally, this useful volume formulates to the practitioner the answers to the majority of questions that the average wide-awake and magazine-reading patient is very apt to ask. G. H. T.

Gynecology. Edited by E. C. Dudley, A.M. M.D., and H. M. Stowe, M.D. Practical Medicine Series, 1915. Volume 4. Published by Year Book Publishing Co., Chicago, 1915. Price, $1.35. **Pediatrics.** Edited by Isaac A. Abt. Orthopedic Surgery. Edited by John Ridlon and Charles A. Parker. Practical Medicine Series, 1915. Volume 5. Published by Year Book Publishing Co., Chicago, 1915. Price, $1.35.

No particular volume of this valuable series is ever much above or much below a fairly high standard. Of course, each specialty is taken care of by some editor-in-chief and his personality will usually dominate the presentation of his subject. Other than this, it may be said, in general, that the volumes of the Year Book as they appear month after month and year after year invariably provide their readers with an excellent résumé and abstract of the most important articles of each of the medical specialties. The errors of omission are few indeed and no partiality or bias are in evidence. To repeat, in substance, a former review: these volumes afford the medical man a valuable means by which he may at all times keep up with the best articles in each of the specialties.

G. H. T.

A Manual of Diseases of Infants and Children. By John Ruhrah, M. D., Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore, Md. Fourth edition, thoroughly revised. 12mo. volume of 552 pages, 175 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.50 net.

Dr. Ruhrah's revised and re-edited fourth edition of the Manual of Diseases of Infants and Children is probably one of the best rapid reference books for clinical use. The 176 text figures are well chosen and for the most part well reproduced. There are several new chapters, one on pellagra, another on drug eruptions, and a very good chapter on mental defects, with a full account of the Binet-Simon method for testing intelligence. Altogether the book is one of the best of its kind, though it cannot take the place of a standard textbook for students. As a reference book it has a very definite place, not only in the library of the student, but in that of the practitioner as well. W. P. L.

Diseases of the Nose and Throat. By Algernon Coolidge, M. D., Professor of Laryngology in the Harvard Medical School. 12mo. of 360 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth $1.50 net.

"The object of this book is to guide the student or practitioner of medicine in his clinical work, by giving him a ready reference to the important details of examination, diagnosis and treatment of the upper respiratory tract."

It has long been the theory of some teachers to give only such special instruction to students as would cause them to immediately refer the case to the specialist. Such may not have been the primary object of the book, but if the ordinary practitioner depended on the very meager and elementary knowledge contained in this volume, such would be the effect.

There are a few outline woodcuts which serve as illustrations, the type is clear and the paper good, but whether these advantages are enough to justify the publication of the volume seems doubtful. H. H.

Cancer: Its Study and Prevention. By Howard Canning Taylor, M. D., Gynecologist to the Roosevelt Hospital, New York; Professor of Clinical Gynecology, Columbia University; Member American Society for the Control of Cancer, etc. 12mo, 330 pages. Cloth, $2.50 net. Lea & Febiger, publishers, Philadelphia and New York, 1915.

Dr. Taylor approaches the problem of cancer by making use of all the knowledge we have so far acquired, giving us a most useful volume for reference, and a concise yet complete presentation of the facts relating to cancer which we now possess.

His chapters on "Precancerous Lesions," "Contagiousness" and "Spontaneous Cures" are very interesting and instructive.

After five preliminary chapters of general information, the remainder of the book is occupied by taking up in detail the consideration of cancer in all anatomical regions; reviewing statistics as to frequency, age, sex, etiology, prognosis, treatment, etc.; each chapter being followed by a list of references. E. H. W.

A Synopsis of Medical Treatment. By George Cheever Shattuck, M. D., Assistant Physician to the Massachusetts General Hospital. Second Edition revised and enlarged. Cloth. 185 pp. Boston. W. M. Leonard, Publisher. 1915. Price $1.25.

The second printing of this little book shows some changes that make a decided difference in its appearance. The binding itself lends dignity. The contents have been changed very slightly since the first appearance of this edition. From the original edition, it is different in many ways. There have been added chapters on the Acute Inflammations of the Upper Respiratory Tract, Diarrhoea, Gastritis, and Constipation. These additions have followed the general plan of the book, namely, the presentation of sound principles of treatment based on known pathology.

As a book for practitioners it is very timely as there is need for just such a book which will bring to the mind the real scientific methods of therapy. The plan of this volume is well arranged. The following points are given: Classification of the Disease; Notes on Pathology and Diagnosis; Methods of Treatment, both general and special; and finally a list of the most useful drugs, with a concise description of dosage, action, indication for use and contraindications, together with a list of the substitutes for each drug.

To the student of medicine this book can be very highly recommended. Of course there are many points not included in its 185 pages but one may be sure that whatever is found in this concise volume is as accurate as medical science can make it. W. W. B.

John Shaw Billings, A Memoir. By Fielding H. Garrison, M. D. Illustrated. Published by G. P. Putnam's Sons, New York and London. 1915. Price $2.50.

This interesting biography of one of our own "Masters of Medicine" tells, simply and entertainingly, of the multitudinous activities in which Dr. Billings engaged during his long and useful life. The reader follows the subject of the volume through his early boyhood and youth, his service as army surgeon during the Civil War, in the Surgeon General's Library at Washington, at the Johns Hopkins Medical School and in the New York Public Library and is amazed at the amount of work accomplished and the quality of the finished product. It seems hardly credible that so much good work could have been crowded into the space of one lifetime, for any one of his three great labors would be considered as a sufficient life work for a man of even extraordinary capabilities.

In the compass of 432 pages the compiler has brought together, in easily readable form, much valuable information concerning the several public enterprises to the successful completion of which Dr. Billings devoted his time and energies. Numerous letters written while he was attached to the army in the field make interesting reading at this time and many observations made by this keen analyst regarding the care of the wounded and on many other topics connected with war in general will hold as good to-day as they did then.

The book can be read by any person, lay or professional, with interest, but to the young especially it is to be recommended as a source of inspiration, for every page sets forth this greatest of all truths: "Sufficient to the day is the labor thereof," and by example teaches that each day has its duties and that only by a conscientious performance of these as they arise will the sum total be worth while. T. G. I.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, M. D., Professor of Pathology, University of Colorado. Third edition, revised and enlarged. 12mo of 585 pages with 176 text illustrations and 13 colored plates. Philadelphia and London: W. B. Saunders Company, 1914. Cloth $2.50 net.

Dr. Todd has divided his book into an Introduction, which deals with the use of the Micro-

scope, and ten chapters dealing in succession with the Sputum, the Urine, the Blood, the Stomach, the Feces, the Animal Parasites, the Miscellaneous Examinations, the Bacteriologic Methods, the Preparation and Use of Vaccines, the Serdiagnostic Methods, and following an Appendix which deals with Apparatus, Reagents and the Stains; Weights, measures, etc., with Equivalents, and lastly an Index.

The Introduction gives a student many pointers in the use of the microscope which should be read by all who use the instrument.

The contents of the book is complete enough for a Clinician and the methods are rather thorough. Purdy's methods are spoken of frequently but each worker has to make his own standards as there is much to consider in these tests. The Index is good. R. B. T.

Exercises for Women. By Florence Bolton, A. B., Director of Women's Gymnasium, Stanford University, 1904-05. (Containing helpful suggestions on matters directly and indirectly related to exercise and development, and an appendix with a wider range of work, briefly tabulated, for the use of teachers. Fully illustrated with over 100 cuts and halftones.) With illustrated details of mat exercises. Funk & Wagnalls Company, New York and London.

A variety of treatises on exercise as applied to the maintenance of health and the treatment of disease have from time to time been published both in this country and in Europe. As a rule, they are presented as parts of larger works including mechano-therapeutics, massage, etc. Their defect is that too frequently they say the little that they have to say at such length the busy practitioner cannot find the time to sift the kernels of desired information from the chaff of their verbiage.

It is with added pleasure, therefore, that we take this opportunity to direct the attention of the readers of this journal to Miss Bolton's unassuming little book. There are but 141 pages in all, but it has seemed to us that the elimination of a single one of them would have been a loss to the book as a whole. The illustrations are for the most part diagrammatic, are placed contiguous to the appropriate text, and accurately illumine it.

In a paper which appeared in the Boston Medical and Surgical Journal Dr. Bradford, Dean of Harvard Medical School, speaks of the modern woman who, with a relaxed pelvic floor, is constrained to undergo an operation and protracted invalidism; whereas her grandmother in like circumstances had divested herself of her corsets and scrubbed the kitchen floor, and in so doing had found the cure for her condition.

There is reason to believe that no small percentage of those chronic invalids, in the attention to whose ailments your sympathetic specialist doth fatten and grow rich, do not require so much that a tuck be taken in relaxed tissues as that the latter be made to reacquire their lost tone. And it is in the care of just such cases as well as many others that your general practitioner, and mayhap your gynaecologist as well, who is not merely an operator, will find "Exercises for Women" a veritable "vade mecum."

It is a peculiarity of the mysticism with which the practice of medicine is invested in the lay mind that did one today prescribe several pints of Spring Valley to be ingested in the course of 24 hours, the majority of patients would not follow our instructions. On the other hand, should one prescribe an expensive mineral water, particularly if it had an odor suggesting an ancient egg, the same persons would obey orders to the letter.

In like manner, while to prescribe a course of floor-scrubbing would be to incense our patient, she will be found amenable to a plan involving carrying out groups of exercises which give the same result.

Such exercise groups, and many others, for we have spoken of but one application of the book, will be found briefly described, adequately illustrated, accurately dosed and clearly indexed in the book before us.

We gave the book to read to a lady whom, being married to her, it were fruitless to attempt to impress with our wisdom. "Why," said she, after reading it, "it's all so simple." That is what we have tried to say in the preceding paragraphs.

J. T. W.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume IV, Number V, (October 1915). Octavo of 228 pages; 56 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published Bi-Monthly. Price per year: Paper, $8.00; cloth, $12.00.

Contents.

Carcinoma of gum and of submaxillary lymph-nodes. Excision cancer-bearing area.

Carcinoma of tongue and of submaxillary lymph-nodes. Amputation tongue.

Cicatricial contracture of neck following a burn. Resection scar and interposition of a flap of normal skin.

Recurrent luxation of humerus. Capsulorrhaphy.

Subcoracoid luxation of head and fracture of surgical neck of humerus. Operative reduction maintained by plating.

Gunshot wound of arm. Cicatricial compression of ulnar nerve-release; division of median nerve. Neurorrhaphy.

Fracture of humerus, lower end. Fracture of ulna, olecranon process. Laceration of ulnar nerve. Operative reduction of fracture. Arthroplasty of elbow-joint.

Ununited fracture of internal condyle of humerus. Reduction of displaced fragment and retention of extra-articular drilling.

Ancient fracture-luxation of elbow-joint. Resection. Arthroplasty.

Ancient fracture of elbow-joint (olecranon process). Resection of olecranon process.

Fracture of radius and ulna. Non-union of radius. Intramedullary and inlay transplants.

Ancient fracture of radius and ulna. Division of ulnar nerve. Neurorrhaphy.

Empyema of pleural cavity. Resection of ribs (Estlander).

Pericholecystic and pericolonic adhesions. Relapse. Omentoplasty; obliterative appendicitis and pylorospasm. Appendicectomy.

Tuberculosis of Fallopian tubes. Resection; retroversion of uterus. Correction; suppurating dermoid cyst.

Sarcoma of ovary. Ablation.

Pyonephrosis. Incision and drainage. Subsequent nephrectomy.

Ureteral calculus. Ureterotomy. Removal of Calculus.

Retroperitoneal Sarcoma. Exploratory Laparotomy.

Inoperable recurrent carcinoma of nasopharyns involving both superior maxillae, ethmoid, frontal and malar bones. Injection of mixed toxins. Disappearance of neoplasm under five weeks of treatment.

Metastatic arthritis of knee-joint. Vicious flexion-contracture. Tenotomy of biceps femoris with correction of deformity. Talk on autosensitized autogenous vaccines.

Ancient infection of hip-joint; secondary flexion

Contracture of knee-joint from burrowing abscesses in thigh muscles. Operative correction. Tenoplasty.

Tuberculosis of knee-joint. Resection by the author's concavoconvex method.

Painful stumps of legs. Reamputation. Excision of neuromata. Neurorrhaphy.

Pott's fracture with eversion deformity: nonunion of tibial malcolus, united fracture of fibular malleolus, and posterior luxation of ankle. Operative reduction of deformity.

SOCIETY REPORTS

COOPER CLINICAL SOCIETY.

You are cordially invited to attend the meeting of the Cooper Clinical Society, which will be held on Monday, December 6, 1915, at 8 p. m., Room 311 of the Stanford University Medical School, corner Sacramento and Webster streets.

Program.

(1) Case of Pulsating Exophthalmos. Ligation of Common Carotid. George T. Brady.

(2) The Prophylaxis of Procidentia (Lantern Demonstration). A. B. Spalding.

(3) The Use of Whole Blood in the Treatment of Hemorrhage. H. R. Oliver.

H. E. ALDERSON, President.
J. D. BARNETT, Secretary.

FRESNO COUNTY.

At the October meeting of the Fresno County Society Dr. Dagmar Peterson, of Selma, was elected to membership; report of the next meeting of the State Society at Fresno was made, and a case of polypi of the rectum was reported by Dr. George H. Aiken.

CLIFFORD D. SWEET, Assistant Secretary.

CITY AND COUNTY OF SAN FRANCISCO.

Department of Public Health.

October 25, 1915.

Trachoma appears to be prevalent in this city among children of a school age. Several cases attending various schools during the past month have come to the attention of the Board of Health, and one case in particular upon investigation we found being treated at an eye clinic and during the interim of treatments was attending the public schools.

I have to call your attention to the fact that Ordinance 1034 of this city, as well as the State law, makes trachoma a reportable disease, and the Board of Health asks your earnest co-operation requesting that all cases of trachoma, particularly in children, be made the subject of a special and immediate report. This co-operation will be not only a means of bringing under control the disease, but also a factor in preventing its spread among other children.

The number of children of foreign parentage attending our schools is increasing annually, and the importance of maintaining a strict vigilance in connection with the preventable diseases is obvious.

Trusting you will give this matter your earnest attention, I am respectfully,

WM. C. HASSLER, Health Officer.

LOS ANGELES COUNTY EYE AND EAR SECTION.

A regular meeting of the Eye and Ear Section was held in the offices of Drs. Hastings, Fleming and Montgomery, on October 4, 1915.

Attendance: Drs. F. L. Rogers, Bullard, Brown, Dudley, Dilworth, Fleming, Hastings, Kiefer, Kelsey, Lund, G. W. McCoy, T. J. McCoy, F. W. Miller, Stivers, Sweet, Stephenson, True, Reynolds, Graham, Ide, Griffith, Leffler, Kress and Old.

Visitors: Drs. Gage and Swetnam.

Dr. T. J. McCoy reported a case of "Iridectomy."

Discussion by Drs. Dudley, F. W. Miller and Bullard.

Dr. W. H. Dudley, case of "Cancer of Larynx" shown twice before. Man had gone East. Disease has spread and sloughing has taken place. Also case of Tbc. larynx treated by Tuberculin T. R. with improvement. Discussion by Drs. F. L. Rogers, Lund, Hastings, Fleming, Dilworth, Geo. W. McCoy.

Dr. Kiefer reported case of Parotitis and Empyema of the Parotid; the only symptoms presented were the stickiness of the larynx, pharynx, nose, etc., on account of the thick mucous secretion. Relieved by free incision of the Parotid gland. Empyema, only symptoms objective, pus from nose and tenderness over the Antrum of Highmore.

Discussion: Dr. G. W. McCoy asked if, in Dr. Kiefer's opinion, the incision of the parotid cured, or was it due to the medication? Answer: Incision. Dr. Hastings: Was there any calculus? Answer: No.

Dr. A. L. Kelsey reported case (specimen) of splinter of steel from an anvil removed from eye of child of 4 years. Magnet, small, did not move object; giant magnet removed it all right. Perphery of lens was injured, but no glaucoma is looked for.

Dr. T. J. McCoy: Was object localized by X-ray? Answer: No.

G. W. McCoy said localization seemed almost imperative in many cases.

Dr. F. L. Rogers, in discussion, mentioned two cases showing the benefit of localization.

Dr. G. J. Lund showed a case of cosmetic operation on nose, hump on nose and external deformity operated on by external incision; lineal scar, but no stitch-hole scars resulted. The skin clips were used.

Dr. T. J. McCoy showed an eye case—a tumor developing in eye of man aged 62, starting from conjunctiva, involving cornea periosteum and bone.

Discussion by Dr. F. W. Miller. He said many similar cases began in Papilloma; advised guarded diagnosis and prognosis. Dr. Dudley said most of the tumors beginning at cornea-scleral junction are malignant; advised section of the specimen and microscopic examination of specimen to show whether tumor extended internally.

Dr. G. W. McCoy reported case of streptococcic lateral thrombosis in a child with colitis, running ear, etc. Streptococci were found in the blood by Drs. Brem and Zeiler; streptococcic vaccine, autogenous given, with good results.

Discussion—Dr. Lund: How do you account for the pulsation of the vein, if it was thrombosis? Answer: Communicated from the brain; a pulsation from the brain.

Dr. Hastings: Was it that or primary jugular bulb thrombosis? Answer: Don't know.

Dr. Dudley: Had a similar case.

Dr. Stivers reported three cases. First, ozena of larynx, primary; second, foreign body from nose; third, tumor of palate.

Dr. McCoy said Ozena case rare.

Dr. Sweet, of Long Beach, advised a meeting devoted to discussion of Ozena. Met a case of Sarcoma with similar symptoms to Dr. Stivers' palate case.

Dr. Leffler: Was heart and urine examined? Answer: Yes, negative.

Dr. Lund advised intra-tracheal injections; oil and menthol recommended.

Dr. F. L. Rogers: Bronchoscope should be used.

Dr. Fleming: Rare to see such cases in this country. This case has some atrophic conditions in nose. Peroxide of hydrogen is satisfactory in

such cases. Put it right into larynx. Observe absolute cleanliness. Stick to the treatment.

Dr. Graham reported an eye case—cataract.

Discussion: Dr. F. W. Miller said he thought many such cases are often latent specific trouble.

Dr. Ide reported recurrent Papilloma of Inf. Turbinate. Healed perfectly after X-ray for three or four months. Also case of Tubercular Epiglottiditis. Also two plates showing impacted molar wisdom teeth buds, after removal of which furuncles were cleared up promptly.

Dr. Old reported a case of foreign body removed from ear after 20 to 25 years.

Election of members: Dr. Swetnam was elected to membership.

Certain changes in the manner of electing members were adopted as a part of the by-laws in conformity with similar regulations existing in the County Medical Association.

C. G. STIVERS, Secretary.

MENDOCINO COUNTY.

On October 29th, at the call of the President, Dr. L. C. Gregory, a meeting of the Mendocino County Medical Society was held at Mendocino, in the office of Dr. Frank C. Piersol. Members present: Drs. L. C. Gregory, Fort Bragg; Frank C. Piersol, Mendocino; Homer H. Wolfe, Albion; Herschel O. Cleland, Ukiah, and Oswald H. Beckman, Fort Bragg.

Dr. Herschel O. Cleland read a very interesting and instructive paper on "Modern Improvements in Surgery." Among the many excellent things brought forward in this paper, the Doctor especially emphasized that of anesthesia as now produced compared with the times of yore. After a general discussion the society extended Dr. Cleland its vote of thanks.

Dr. Piersol exhibited a very interesting case of angular fracture of the radius and ulna at their junction of the middle and upper thirds. This exhibit, with its complications, gave food for a very interesting general discussion.

Dr. Beckman read a paper entitled "Industrial Accident Insurance," which was discussed generally and declared interesting.

The meeting then adjourned to meet again at the call of the President.

Afterward Dr. Piersol conducted the members to an excellent repast, for which those banqueted extend to him their sincere and fraternal thanks.

OSWALD H. BECKMAN, Secretary.

SAN BERNARDINO COUNTY.

The following is a list of the new officers of the San Bernardino County Medical Society elected at our annual meeting, held here on October 5th: President, Dr. C. G. Hilliard, Redlands; First Vice-President, Dr. P. M. Savage, San Bernardino; Second Vice-President, Dr. J. H. Evans, Highland; Secretary-Treasurer, Dr. Carroll C. Davis, San Bernardino.

Please pardon the delay in sending in this report. I was under the impression that it had been sent you by the retiring secretary.

CARROLL C. DAVIS, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the County Hospital at French Camp, Friday evening, Oct. 29. The following members were present: Drs. R. T. McGurk, Wm. Friedberger, C. E. Stagner, J. D. Dameron, W. J. Backus, B. F. Walker, F. W. McKibbon, E. A. Arthur, Mary Taylor, Margaret Smyth, Minerva Goodman, H. E. Sanderson, S. E. D. Pinniger, Kendall, L. Dozier and D. R. Powell, with Drs. Koebig of Riverbank, Sprague and Edgerton of Stockton and Griffin of Tracy as guests.

Dr. Kendall of the County Hospital staff discussed the experiences they had had with intravenous methods of medication, stating specifically the use of quinine hydrochloride in malaria, and salvarsan and tridylate in lues, and the use of large doses of antitoxin in diphtheria. The results obtained were very great and very successful and a big argument in favor of intravenous medication.

Dr. Friedberger presented a case of compound fracture of leg bones in which plates had been successfully used in face of suppuration. He also recited a case of gunshot wound through the thigh involving the bone, and asked for discussion as to the best form of treatment.

Dr. Stagner presented two cases addicted to the morphine habit who were undergoing the Lambert cure. He also presented a most interesting case of sarcoma of the uterus, which had brought up very difficult problems in differential diagnosis between tumor and pregnancy.

After general discussion, the meeting adjourned to enjoy a most delightful repast.

DEWEY R. POWELL, Secretary.

SANTA CLARA COUNTY.

The Santa Clara County Medical Society, on the evening of November 15, had a meeting exclusively for social purposes. A delightful banquet had been prepared at the Hotel Vendome, San Jose, and something over forty members attended. Senator Benson and Senator Jones were present, and also Dr. Philip Mills Jones. Senator Benson and Senator Jones discussed medical legislation and public health legislation from the standpoint of the legislator, and Dr. Jones spoke on the same subjects from the standpoint of the physician and the State Medical Society. He also called attention to the very undesirable carelessness of many physicians in criticizing the results of other physicians' treatment or work. The question of the increasing number of suits for damages for alleged malpractice was also touched upon, and the necessity for a close and harmonious organization was thoroughly emphasized. During the dinner and between the speeches the guests were entertained by the Hawaiian Orchestra from the Exposition. The meeting was in every way a satisfactory one. Dr. Simpson made a delightful toastmaster.

Social gatherings of this kind in county medical societies do a world of good, as they bring together under the most happy circumstances physicians who seldom meet.

TUBERCULOSIS SOCIETY.

Miss Edna D. Porter has been added to the staff of visiting nurses of the San Francisco Association for the Study and Prevention of Tuberculosis, according to a statement issued from Association headquarters, 1547 Jackson Street.

The report of the Jackson Street Clinic for October shows that on the first of the month there were 256 patients under treatment; that at the end of the month there were 294, a gain of 38 during the month.

The report of the Stanford Tuberculosis Clinic, on Sacramento and Webster Streets, shows that on the first of the month there were 64 patients under treatment, and on the last of the month 74, a gain of 10. The total attendance at both clinics during the month was 444.

The visiting nurses of the Association made 469 calls on patients or on their behalf, and spent 234 hours in the clinics.

The National Association for the Study and Prevention of Tuberculosis has designated Monday, December 6th, to Sunday, December 12th, as "Tuberculosis Week." The local Association has under way plans for the celebration of this week, which will be announced at a later date.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon therapeutic agents offered to the medical profession. The editor will gladly supply available information on matters coming within the scope of this Department.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Mercurialized Serum, Mulford.—A solution of mercuric chloride in normal horse serum diluted with physiologic sodium chloride solution. It is proposed for the treatment of syphilis, particularly the cerebrospinal type. It is supplied as:

Mercurialized Serum, Mulford, No. 1.—One 30 c.c. ampule containing the equivalent of 1.3 mg. (1/50 gr.) mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 2.—One 30 c.c. ampule containing the equivalent of 2.6 mg. (1/25 gr.) of mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 3.—A package of ten 30 c.c. ampules each containing the equivalent of 1.3 mg. (1/50 gr.) of mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 4.—A package of ten 30 c.c. ampules each representing 2.6 mg. (1/25 gr.) mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 5.—8 c.c. mercurialized serum, Mulford, containing the equivalent of 22 mg. (1/3 gr.) of mercuric chloride in a syringe graduated in fourths, with needle.

Mercurialized Serum, Mulford, No. 6.—A package of ten syringes, each containing 8 c.c. liquid which represents 22 mg. (1/3 gr.) of mercuric chloride. H. K. Mulford Company, Philadelphia, Pa. (Jour. A. M. A., Oct. 2, 1915, p. 1185).

Radio-Rem, Outfit No. 4.—An apparatus designed for the production of radio-active drinking water by the action of radium sulphate contained in terra cotta plates. It consists of two plates contained in 250 c.c. bottles; when the bottles are filled with water the two plates impart about 1.8 microcurie (5000 Mache Units) to the water in twenty-four hours. For action, uses and dosage refer to the article on radium in New and Nonofficial Remedies. Schieffelin and Co., New York (Jour. A. M. A., Oct. 9, 1915, p. 1281).

Histamine Hydrochloride.—The hydrochloride of the base beta-iminazolylethylamine (histamine). It is a valuable reagent for the standardization of pituitary preparations.

Imido, Roche.—A name applied to histamine hydrochlorid.

Ampules Imido, Roche.—Each ampule contains 1.1 c.c. of an aqueous 1 in 1000 solution of Imido, Roche (1 c.c. contains 1 mg.). Hoffmann-LaRoche Chemical Works, New York City (Jour. A. M. A., Oct. 16, 1915, p. 1367).

Betanaphthyl Salicylate.—The salicylic acid ester of betanaphthol. It passes the stomach unchanged, but is split into its constituents in the intestinal tract. It is believed to act as an intestinal antiseptic and to act in a similar way in the bladder. It is said to be useful in intestinal fermentation, catarrh of the bladder, rheumatism, etc. Mallinchrodt Chemical Works, St. Louis, Mo. (Jour. A. M. A., Oct. 30, 1915, p. 1553).

Betol.—A name applied to Betanaphthyl salicylate (which see). Merck and Co., New York (Jour. A. M. A., Oct. 30, 1915, p. 1553).

Items of Interest.

The Soy Bean.—The soy bean is of medical interest: (1) because it contains the enzyme, urease, which converts urea into ammonia and carbon dioxide and hence is used to estimate urea in urine; and (2) because soy bean products have been recommended as foods for diabetics. Street and Bailey of the Connecticut Agricultural Experiment Station, report that although the soy bean contains about 25 per cent. total carbohydrates, only about 8 per cent. composed of sugar, starch and dextrin, may be considered objectionable in a strict diabetic diet. Thus the sugar-forming carbohydrates contained in soy beans fall well within the limit of 10 per cent. regarded as safe for diabetics (Jour. A. M. A., Oct. 16, 1915, p. 1372).

Camphor, Natural and Synthetic.—Though having the same chemical composition, natural camphor is levorotatory while synthetic is optically inactive, it being a mixture of levorotatory and dextrorotatory molecules. Synthetic camphor, used externally and in moderate doses internally, has been reported to have the same effects as natural camphor. The evidence is, however, unsatisfactory. The natural product being readily obtainable, there is no warrant for the therapeutic use of synthetic camphor until more conclusive evidence is at hand (Jour. A. M. A., Oct. 30, 1915, p. 1555).

Lactopeptine and Elixir Lactopeptine.—Lactopeptine is sold under the claim that it contains pepsin, diastase, pancreatin, lactic acid and hyrochloric acid. In 1907 the Council on Pharmacy and Chemistry reported that Lactopeptine was practically inert—"essentially a weak saccharated pepsin," devoid of tryptic activity. An examination made by the Council in 1913 confirmed the previous findings. Nearly four months after publication of the last report, the manufacturers protested against the report claiming that Lactopeptine possessed pancreatic activity and contained "loosely combined" hydrochloric acid. The council now reports that an examination of the market supply demonstrated that a few recently manufactured specimens showed slight (therapeutically negligible) tryptic activity, but that most showed none; the amount of hydrochloric acid was insignificant. Again declaring Lactopeptine and Elixir Lactopeptine ineligible for New and Nonofficial Remedies, the Council points out that, whatever the tryptic activity of the mixture, it is therapeutically useless. Mixtures of pepsin and pancreatin are irrational. The two substances are not indicated in the same conditions nor can they act together. Under physiologic conditions such mixtures are chemically impossible. In a liquid medium the two substances destroy each other (Jour. A. M. A., Oct. 23, 1915, p. 1477).

A Therapeutic Absurdity.—Lactopeptine, whether in the form of an elixir, powder or tablets, is a therapeutic absurdity. Even if fresh specimens of the powder, possessing slight tryptic activity, have any advantage over old ones, there is no way of telling which the patient is likely to get, for the trade packages of Lactopeptine are undated. In liquid preparations like Elixir Lactopeptine, pepsin and pancreatin destroy each other (Jour. A. M. A., Oct. 23, 1915, p. 1466).

The N. F. Imitation of Elixir Lactopeptine.—Nearly forty years ago the essential worthlessness of Lactopeptine was brought to the attention of the pharmaceutical profession. In spite of this knowledge the pharmacists have included imitations of Lactopeptine and Elixir Lactopeptine in the National Formulary under the titles Compound

Powder of Pepsin and Compound Digestive Elixir. The N. A. R. D. Journal, devoted to the business rather than the professional side of pharmacy, defends the Compound Digestive Elixir on the ground that "physicians keep right on prescribing it." The pharmaceutical profession should consider that pharmacists will in the end lose the confidence of the medical profession and the public by the tolerance of worthless pharmaceuticals (Jour. A. M. A., Oct. 23, 1915, p. 1467).

Some "Patent Medicines" for External Application.—The following statements of composition are indicated by the reports of various state boards of health, the government chemists and the A. M. A. Chemical Laboratory: Amarol, a "complexion beautifier," is composed of Epsom salt 95 per cent. and borax 5 per cent. Anti-Freckle Lotion (Gustin's) contains mercuric chloride 1.5 per cent., alcohol 2 per cent. and water 96.5 per cent. Calocide, for "foot trouble," is sodium chloride 22.44 per cent., borax about 37.58 per cent., alum about 39.35 per cent., tannin small amounts. Cerol, which "cleans and clears the skin," is boric acid, stearic acid and perfume. Clearola, which will "whiten the skin," is sulphur. Cuticle Acid, to "remove dead skin," is alcohol 10 per cent. and oxalic acid 2 per cent. Derma-Royale for skin affections, is a dilute alcohol-glycerin solution with small amounts of camphor, myrrh, benzoin and possibly other aromatics in suspension. Eptol, a wrinkle remover, is essentially borax 37 per cent., soap and stearic acid 63 per cent. Fatoff was found to be essentially soft soap. Gloriol Balm, a vanishing toilet cream, is composed of stearic acid, soap and borax 23.7 per cent., water 76.3 per cent. Gloriol Glowene, said to be a substitute for soap, is soft soap. Zemo, for eczema, pimples, dandruff and similar affections, appeared to be a watery-alcoholic solution containing methyl salicylate, thymol, borax, tannic acid, glycerin, menthol and a phenol-like body (Jour. A. M. A., Oct. 16, 1915, p. 1365-7).

Somnoform.—This was originally composed of ethyl chloride 60 per cent., methyl chloride 35 per cent. and ethyl bromide 5 per cent. Now it is said to contain but 1 per cent. ethyl bromide. Like ethyl chloride, Somnoform has been used as a substitute for nitrous oxide before ether anesthesia and for short operations, but has been mostly used by dentists for extractions. It is doubtful if the mixture has any advantage over ethyl chloride. The mortality is less than that of chloroform, but twice that of ether and four times that of nitrous oxide (Jour. A. M. A., Oct. 16, 1915, p. 1391).

Iodum-Miller.—The A. M. A. Chemical Laboratory reports that Iodum-Miller was found to be essentially a solution of iodine and potassium iodide in glycerin containing 1.68 per cent. of free iodin. The Council on Pharmacy and Chemistry reports that Iodum-Miller was not eligible for New and Nonofficial Remedies because incorrect statements are made in regard to its composition; because unwarranted therapeutic claims are made for it; and because the application of a trade name to a simple solution of iodin is not to be countenanced (Jour. A. M. A., Oct. 2, 1915, p. 1202).

JOURNAL OF CUTANEOUS DISEASES.

Beginning with the January, 1916, number, The Journal of Cutaneous Diseases, including syphilis, will be published for the American Dermatological Association by W. M. Leonard, of Boston. Each number will contain 80 pages, and as far as possible be of interest and value to the general practitioner as well as to the dermatologist.

GEORGE M. MacKEE, M. D., Editor.

PEACHES PEELED BY LYE NOT INJURIOUS TO HEALTH.

In spite of the idea held by many people that lye-peeled peaches are injurious to health, Professor M. E. Jaffa, Consulting Nutrition Expert of the California State Board of Health, says that they are no more injurious than hand-peeled fruits. Except for the marks of the knife on the hand-peeled product, it is impossible to distinguish one from the other. Food value, flavor and quality are unchanged.

The process of peeling fruit by immersing it in hot lye, afterward washing several times with cold water, is used in many canneries throughout the State. The method is rapid and economical. Yet some people will not eat fruit that has been peeled by this process, fearing that it may be injurious to health. No question has been raised, however, concerning the use of the same process in preparing prunes for the market.

Analyses have been made in order to learn if the acidity of the lye-peeled peach is less than that of the hand-peeled peach, and it was determined that the lye process does not affect the acidity of the finished product. The housewife, then, may be assured that canned peaches, peeled by this process, are wholesale and that there is nothing in them that may be injurious to health.

THE AUTOLYSIN TREATMENT OF CANCER.

Richard Weil, New York (Journal A. M. A., Nov. 6, 1915), reviews the results of the Horowitz treatment of cancer, as carried out by Dr. Beebe in the General Memorial Hospital in New York City. In accordance with a well-defined policy of the hospital which approved the test of proposed therapeutic measures in cancer, Dr. Beebe was permitted to make a trial, he stating that he was in possession of complete knowledge of the composition and formula. Dr. Beebe was given the privilege of applying the treatment in a considerable number of cases, under the general clinical supervision of Dr. Weil. Only such cases were taken as could not be helped materially by other means available. In nearly all the cases the patients were given the benefit of radium or Roentgen-ray treatment in addition to the autolysin method. That all the patients were moribund or in a very serious condition was not the case. Some of the patients put in Dr. Beebe's hands were in apparently good physical condition, though the nature of their ailment, as often happens in cancer, made successful treatment by other methods impossible. If the treatment had any real value it should have been shown in such cases. Since Jan. 1, 1915, twenty-three cases have been treated in the wards of the hospital with autolysin by Dr. Beebe. Of these, fourteen patients died in the hospital and eight were discharged unimproved. Only one is at the present, to the best of Weil's knowledge, in a condition that could be considered an improvement over that at the time of his admission. Although the general outcome of the cases was not affected by Beebe's treatment, the clinical course was somewhat altered. The method caused, when injections were made into the tumors, suppuration and sloughing as is characteristic of irritant or destructive substances in such cases and did not in this constitute any advance over former methods. Subcutaneous injections given distant parts of the body were followed sometimes by improvement in the appearance of ulcerated tumors but no greater than that seen to follow the ordinary surgical dressings usually employed in such cases, and to these Weil attributes the temporary change for the better. The more general good effects claimed by Beebe from autolysin, such as relief of pain and insomnia, and increase of appetite, were what might be looked for, Weil claims, by the hopefulness aroused by a lauded new remedy. Contrasted with such occasional effects is another set of results very inadequately mentioned by Beebe in his articles. Half the patients at least were most unfavorably affected by the local injections. The pain was often so severe that the patients refused to accept the treatment.

The swelling often gave distress and in two instances the treatment appeared to be responsible for an almost fatal hemorrhage, and these unquestionably outweighed the very questionable advantages claimed. Weil discusses particularly two of the cases published by Beebe in which all the improvement observed is, he suspects, due to the simultaneous Roentgen-ray treatment, which often gives brilliant, if temporary, results. He deplores the publicity used as leading to hopes that cannot be realized, causing useless expense and long and painful journeys to receive treatment. His own personal belief, based on observation, is that autolysin treatment is useless and liable to do damage rather than good. The article is illustrated.

FULL-TIME HEALTH OFFICERS.

The necessity of health officers giving their full time to their official functions is pointed out by J. W. Kerr, Washington, D. C. (Journal A. M. A., Nov. 6, 1915). In this country he says the health service has been a plant of slow growth, stimulated mainly by epidemics. The funds appropriated have been too inadequate and the conditions all over the land have been bad. In Kansas, for instance, there were no full-time health officers prior to the present year, and in Illinois, with the exception of the city of Chicago and La Salle, Peru and Oglesby, which have joined forces, there are, so far as reported, no full-time health officers at present, and only 106 paid health officers in the state, some of these receiving only $5 a year. While local health administration should be the strongest defense against disease, it is in reality the weakest in our national resources. The federal or state governments cannot be expected to act locally except in special emergencies and normally should only exercise advisory and supervisory control as regards local matters. Authority has been dissipated and intrusted to separate boards and commissions to the damage of public health in general. It would be advisable to have more joint action between communities, several jurisdictions combining to support health officers that can give all their time, and only this will give us efficient local health administration. In Germany, he says, he found by inquiry that the imperial government, while authorized to act, had found it unnecessary because of the efficiency of the local health authorities. Recent legislation in several states is reviewed by Kerr and some progress has been made toward having efficient local health boards, especially in certain states, such as North Carolina and Massachusetts and in proposed legislation in others. Such legislation should be encouraged.

THE COMMANDMENTS GOVERNING THE RELATIONS OF THE PUBLIC WITH THE DOCTOR.

The medical society of Frankfort has elaborated ten commandments or rules to govern the relations of the public to the doctor. These rules have been printed and the doctors are asked to distribute them among their patients and to post them in their waiting rooms. The rules are as follows:

1. Do not call the doctor unnecessarily for trivial illness, and do not wait too long in the case of serious illness or until the illness has reached such a stage of severity that it is imperative to call the doctor. Much valuable time may be lost by delay in securing medical assistance.

2. If your condition permits, consult the doctor during his office hours and do not ask him to come to you. Some examinations can be made only in the doctor's office, where certain instruments which cannot easily be transported are kept.

3. If you have decided that you will call the doctor, inform him to that effect before he leaves his home to make his calls; that is, before 9 o'clock in the morning. The doctor must lay his plans for the day's work ahead of time, and if you wish to assure yourself of an early visit, send in an early call.

4. Do not ask the doctor to call at a certain hour, but leave the time for making a visit to him, if your case is not urgent or not an emergency case which demands an immediate response to your call. The doctor is never master of his time, and it is very difficult for him to make a visit at a certain time. The business man should not expect his doctor to time his call at the noon hour when the former can leave his business and be at home. If he cannot consult the doctor during office hours, he should go home and remain there until the doctor can come to see him.

5. Do not ask the doctor to come immediately when it is not necessary. Such a visit, being an emergency visit, is combined with great inconvenience and loss of much time, as it interferes with other work. At the same time, other patients who should be visited first are slighted thereby.

6. Never call the doctor at night except in an emergency case. The doctor is human, and like every other man must have his rest. A tired, worried and overworked doctor, one who is frequently disturbed in his sleep, naturally cannot render such efficient service to his patient as he could if his rest were not broken so much.

7. On Sunday the doctor should be allowed to rest. No demand should be made on his time, except when his services are absolutely needed.

8. If a doctor is needed to answer an emergency call, please do not notify more than one man at the same time. If, in the confusion of the moment, more than one doctor has been called, countermand multiple calls as soon as possible.

9. When the doctor is expected, please have everything ready for him so that time will not be lost. Above all things, do not expect the doctor to wait to see you, but have your room and yourself in readiness to receive him. Have water, soap and towel in readiness for him, likewise pen and ink and anything else that might be needed by him, to avoid delay.

10. Do not detain the doctor unnecessarily during his office hours. Other patients are waiting to see him, each in his turn, and lost time may be a valuable item for them. Furthermore, other patients are awaiting the doctor at their homes. Female patients should be prepared to submit to any examination with as little loss of time as possible, and be so dressed that they can leave the office quickly and without the assistance of a maid.—Journal A. M. A.

THE NOVEMBER MEETING OF THE STATE BOARD OF HEALTH.

The State Board of Health met at the office of the Board in Sacramento on November 6. The members present were Dr. George E. Ebright, President; Dr. Fred F. Gundrum, Vice-President; Dr. Edward F. Glaser, Dr. Adelaide Brown, Dr. Robert A. Peers, and Dr. Wilbur A. Sawyer, Secretary.

On account of the marked increase in the work of the Bureau of the Hygienic Laboratory and the variety of its functions, the name of the Bureau was officially changed to the more correctly descriptive title, Bureau of Communicable Diseases, by the following resolution:

Resolved, That the State Hygienic Laboratory may be designated, in the public and private communications of the Board, as the Bureau of Communicable Diseases.

The position of Director of the Bureau of Communicable Diseases, formerly known as the Bureau of the Hygienic Laboratory, was filled by the ap-

pointment of Dr. James Gordon Cumming, M. D., Dr. P. H., of Ann Arbor, Michigan. Dr. Cumming will enter upon the duties of his office on January 1, 1916. The central office of the Bureau is on the campus of the University of California at Berkeley.

In accordance with legal advice to the effect that the State Board of Health has no jurisdiction over the sanitation of sea-going vessels, even if they are engaged only in interstate commerce, it was decided to refer all complaints or other matters pertaining to sanitation on such vessels to the United States officials.

Two instances of arrest and prosecution of alleged violators of the Board's regulations regarding the control of diphtheria carriers were brought to the attention of the Board. In one case the fact of the violation could not be proved by the local authorities and in the other the defendant pleaded guilty.

The Board offered to distribute cards of advice to persons suffering from venereal diseases, through those health departments, clinics, and organizations which wish to co-operate. The cards give directions regarding the prevention of spreading the disease.

The Secretary and the Attorney to the Board, Mr. Kemper B. Campbell, were instructed to work out a plan for co-operation between the United States District Forester and the State Board of Health in placing warning placards regarding stream pollution in the National Forests and enforcing sanitary laws and the regulations of the State Board of Health.

On the recommendation of Mr. C. G. Gillespie, Director of the Bureau of Sanitary Engineering, a temporary permit was granted to the City of Reedley to discharge sewage into the Kings River, on the conditions that they so levee and sand-bank the river as to prevent any direct inflow of sewage into the river, and that they chlorinate the pond of sewage before the high stage of the river is reached. Plans were made for an early and complete investigation relative to the request of the city for a permanent permit.

A complaint regarding the sewer farm of the City of Chico was received and referred to the Bureau of Sanitary Engineering for investigation.

In accordance with the recommendation of the Director of the Bureau of Sanitary Engineering, a permit was granted to the City of Pittsburg to discharge sewage into New York Slough.

Resolutions passed by the City Trustees of Redding, calling attention to the pollution of the Upper Sacramento River, were presented to the Board. The Board instructed Mr. Gillespie, Director of the Bureau of Sanitary Engineering, to investigate.

The Board asked Mr. Gillespie to submit to the Board at the next meeting a classification of the streams of California, on a sanitary basis, as complete as the present available data will warrant.

A resolution was passed refusing to permit the discharge of sewage into Lake Tahoe, even after chlorination, as there are other practical methods of disposal. It was reported to the Board that the summer resorts sewering into the lake are making preparations for other methods of sewage disposal in accordance with the recommendations of Sanitary Inspector Ross and Chief Engineer Gillespie.

A plan submitted by Mr. George D. Leslie, Director of the Bureau of Vital Statistics, for detecting failures to report births, was adopted by resolution, and the Secretary was instructed to enforce the law against physicians and others who fail to report births.

A paster to be required in connection with the transportation of bodies was submitted to the Board by the State Board of Embalmers, and after minor changes, was adopted by the State Board of Health.

Plans for the distribution of the state tuberculosis subsidy to county hospitals were presented, discussed, and amended. It was decided to place special emphasis, in the requirements for accrediting tuberculosis hospitals, on the diet and care of the patients. The Board agreed, moreover, that attention must be given to the extent of the need in the county, and that county tuberculosis hospitals of highly expensive construction with small bed capacity and a long waiting list would not be approved. It was decided that Boards of Supervisors contemplating the building of tuberculosis hospitals or wards should submit plans in advance if they desire to receive the subsidy.

The report of the Committee on Tuberculosis, appointed to organize the Bureau of Tuberculosis, was presented by the Chairman, Dr. Adelaide Brown, and was accepted, and the committee was discharged.

In accordance with the recommendation of the Director of the Bureau of Registration of Nurses, the following applicants, having complied with the regulations of the Board, were registered as Registered Nurse: Attalee May Buckingham, Lucy F. Conway, Katherine L. McKenna.

The following hospitals, after inspection, were re-accredited for one year, on the recommendation of the Director of the Bureau of Registered Nurses: County Hospital, San Diego; East Bay Sanitarium, Oakland; Riverside Hospital, Riverside; Samuel Merritt Hospital, Oakland. The Providence Hospital, Oakland, was accredited for one year.

Several large lots of frozen eggs in cold storage in Los Angeles, previously placed under quarantine by the State Board of Health, on the recommendation of Mr. E. J. Lea, Director of the Bureau of Foods and Drugs, were declared unfit for human consumption and were ordered destroyed.

After extensive investigation, and on the recommendation of the Director of the Bureau of Foods and Drugs, sixteen hundred barrels of tomato pulp, in quarantine at San Leandro, were declared unfit for human consumption and ordered destroyed.

A communication from the State Industrial Accident Commission, offering co-operation in the investigation of hookworm disease in the mines was considered, and the Secretary was instructed to arrange for a conference with the Commission to complete plans for an early investigation.

The Secretary was authorized to start a collection of lantern views and moving picture films for use in popular public health instruction.

Licenses to operate cold storage warehouses were granted to the following firms: Brandt Brothers, Healdsburg, and the Cudahy Packing Company, Los Angeles.

The next business to come before the Board was the consideration of those violations of the food and drug laws which had been set for hearing on this date. Cases were decided upon their merits, and where prosecution was indicated, they were referred to the District Attorney.

WILBUR A. SAWYER, Secretary.

A CLINICAL PILGRIMAGE IN WAR-TIME.

The Children's Hospitals of Europe.

Dr. Jno. A. Colliver, of Los Angeles, has recently paid a visit to the clinics of the children's hospitals of Europe, and he records his impressions of these in the August number of the California State Journal of Medicine. Commencing with London, he remarks that here are to be seen children more poorly dressed, poorly nourished, and poverty-stricken than in any other city. The amount of material at the out-patient department of the Great Ormond Street Hospital is so abundant and the assistants so few that examinations are apt to be hurried and superficial. But the

opportunities for clinical study are excellent. Especially is this true of rheumatism and of rickets. In reference to the former of these the frequency of subcutaneous nodules impressed Dr. Colliver, for apparently these nodules are rarely seen in America. Other points noted are the removal of the tonsils by enucleation and the value of the clinical demonstrations in the Children's section of the Royal Society of Medicine. The summing up, however, is rather cruel—"on the whole English physicians are not so accurate in their diagnosis and have a tendency to use more drugs than in other places."

Of Paris the record is confined to a remark on the low morality of the view which is taken of such questions as illegitimacy, prostitution, and so on, and the fact that a girl who has left her situation to give birth to a child may be later on restored to her former position is evidently regarded as a shocking occurrence. This may be, but its record does not give us much information relative to the study of the diseases of children in Paris. Possibly the war has temporarily disorganized this study, and has left the superior morality of the States all the more shining by contrast.

German and Austrian Clinics.

In the German cities great emphasis is placed on hygiene and prophylaxis. At Pfundler's clinic at Munich doctors from many countries were seen, and indeed the assistants were more numerous than the patients. The work is characterized by great thoroughness. The children are well provided with clothing and shoes, if necessary at the cost of the Government, and at the schools there is an interruption of the work for two hours in the middle of the day for food and rest and recreation, a condition which apparently does not obtain in America. In the workingman's museum great attention is paid to the illustration of methods which relate to the preservation of health and to the rearing of healthy children. Again, in the direction of disease prevention the streets are kept scrupulously clean, and the malignant fly is thus deprived of his opportunity. One of the results is seen in the absence of typhoid fever, of which, it is said, only a single case has been known in Munich during several years. This occurred in the house of a dairyman, who as a reward was sent to prison for nine years.

Professor Pirquet's Kinderklinik at Vienna is pronounced to be one of the best equipped and best organized children's hospitals in Europe. Clinical assistants must understand German and must undertake to stay for at least six months. Infectious diseases, such as diphtheria, measles, scarlet fever, and gonorrhoea, are treated in beds separated by glass partitions. Special attention is paid to tuberculosis, and both in winter and summer children are kept on the roof of the hospital, and in the warm weather the only clothing permitted to the child is a hat! The Pirquet test is used as a routine measure, as is also examination by the X-rays. Tuberculin treatment is given twice a week, and impressive results are seen in tuberculous peritonitis and adenitis, as well as in phthisis pulmonalis. Again, illustrations of hereditary syphilis are seen in great numbers. Good results are recorded of the effects of splenectomy in icterus haemorrhagica, and in one case the red blood cells increased within three weeks after operation from 800,000 to over 4,000,000. One of the physicians treats pulmonary tuberculosis by suggestion and claims excellent results.

Hindrances of the War.

At Berlin (visited two months after the commencement of the war) the most impressive thing is pronounced to be the infant feeding of Finkelstein and Meyer. Here and in the other clinics research and teaching work were in abeyance, as the assistants were engaged in work for the army. The hospitals are to a large extent given over to wounded soldiers, and only the most urgent cases of disease in children receive attention. Work has been in progress in such directions as the immunity of the newly born, the nature of diphtheria immunity, tuberculous disease of the intestine, the treatment of tubereulous meningitis, the cutaneous reaction of diphtheria, and research work with the electrocardiograph, but all these and others are in the meantime suspended. Professor Pirquet, too, has had to abandon much of his special work and is devoting himself to the wounded soldiers who are received into his hospital. Dr. Colliver expresses the opinion that even if the war stopped today it would take Germany and Austria more than a generation to regain the position they have so long held in the scientific world. He believes, also, that one of the effects of the war will be a tendency to shift this scientific and research spirit to America. Certainly his record of the confusions and hindrances which the war has created indicates how far-reaching and disastrous will be the effects both on scientific progress and on the practical methods by means of which the health of the rising generation are to be promoted. Science, it is said, knows no frontiers, but the international bitterness which will long survive the cessation of hostilities will seriously interfere with the freedom of communication upon which the diffusion of knowledge is largely dependent.

In a summary of his observations Dr. Colliver concludes as follows: Liverpool for orthopaedics; London for malnutrition, rheumatism, chorea, endocarditis, and rheumatic nodules; Munich for hygiene, prophylaxis, health regulations and food stations, and preservation of the normal; Vienna for tuberculosis, syphilis, X-rays, pathology, and research work; Berlin for infant feeding; and America for practicability and some of the best of all. It is sometimes said that travel in foreign countries has the advantage of making one more content with the state of affairs at home. The fine feathers of far-away birds are not always so enchanting when seen close at hand, and no one will grudge Dr. Colliver his conclusion that there are abundant good things in his own country. No doubt he will wish to make them still better, and in this ambition we cordially wish him every success.

NEW MEMBERS.

Bolton, M. Blanche—San Pedro.
Metzger, J. A.—Los Angeles.
Patrick, Marcia Alice—Los Angeles.
Bonoff, Karl M.—Los Angeles.
Burton, James—Pasadena, Cal.
Brown, Page—Los Angeles.
Carter, Joseph J.—Los Angeles.
Stadelman, Eugene—Long Beach.
Teel, A. W.—Glendale.
Dieterle, Karl Lionel—Los Angeles.
Klutho, John C.—Los Angeles.
Remaly, Chas. E.—Los Angeles.
Evans, Joseph G.—Los Angeles.
Bullock, Annie Sophia—Alhambra.
Bay, Samuel G.—Los Angeles.
Davidoff, Olga M.—San Francisco.
McLeish, Alex. H.—Napa.
Downing, S. R.—Visalia.
Waller, Julian L.—San Francisco.

DEATHS.

Caven, C. L.—San Diego.
Russ, Raymond—Hillsborough, Cal.
Leisenring, Peter S.—San Diego.
Le Fevre, Joseph P.—Los Angeles.
Knox, Myra—Oakland.
Taylor, Robert F.—Napa.
Mulligan, A. P.—Salida, Cal.
Richards, J. F.—San Francisco.
Hasse, Herman E.—Santa Monica.

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